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PLANTAE AUSTRO-AMERICANAE X AMERICAЕ AUSTRALIS PLANTAE NOVAE VEL ALIA RATIONE SIGNIFICANTES

BY

RICHARD EVANS SCHULTES

ONE hundred years ago, Richard Spruce predicted that the northwestern parts of the Amazon Valley, especially that part lying in Colombia, would be found to be an area peculiarly rich in plants still unknown to science. Continued studies of collections made from this region during the past ten or fifteen years convince us of the soundness and wisdom of Spruce's observation.

The present paper, a miscellany of notes treating chiefly of new species and varieties, furthers a series directed towards our understanding of the flora of South America, with primary reference to the northwestern Amazonia.

It is with appreciation that I acknowledge the collaboration of the following specialists: Dr. John Wurdack (*Melastomaceae*) and Dr. Bassett Maguire (*Guttiferae*) of the New York Botanical Garden; Dr. José Cuatrecasas (*Paraprotium*) and Dr. Richard S. Cowan (*Calliandra*, *Cassia*, *Inga*, *Jacqueshuberia*, *Macrolobium*) of the Smithsonian Institution; Dr. John D. Dwyer (*Tachigalia*) of St. Louis University; Dr. Harold N. Moldenke (*Eriocaulon*) of the Trailside Museum; and Dr. Robert Woodson (*Apocynaceae*) of the Missouri Botanical Garden. I likewise thank Miss Ruth Barton for the careful

line drawings which she has prepared of several of the novelties. These drawings and their publication were made possible through a grant from the National Science Foundation.

The families are arranged in accordance with the Engler-Gilg system, and the genera are enumerated alphabetically under the families.

CYCADACEAE

***Zamia madida* R. E. Schultes sp. nov.**

Truncus grandis, elongato-obovoideus, valde amylaceus, 10–18 cm. longus, basi 5–7 cm. in diametro, perfecte subterraneus, apice multis bracteis fibroso-coriaceis, siccis, fuscis, elongato-triangularibus, usque ad 6 cm. longis et basi 0.5–1 cm. latis coronatus. Folia una ad tres, cum petiolo usque ad sex ped. longa; petiolo robusto, valde sulcato, basi rigidissimo sed apicem versus aliquid flexuoso, basi spinulis lignosis brevibus armato, basi 1–1.5 cm. in diametro; rhachide 1.3–1.5 m. longa; segmentis leviter coriaceis, supra nitida, infra pallidiora, utrinque duodecim ad quattuordecim, oppositis vel suboppositis, plusminusve 2.5 cm. distantibus, ellipticis vel elliptico-lanceolatis sed vulgo obliquuis, margine leviter revolutis atque basim versus integris sed apicem versus remote et irregulariter dentato-serratis, apice oblique acuminatis, basi in petiolulo plerumque 2–2.5 (sed saepe usque ad 5) cm. longo productis et laminarum base ipsa collo conspicuo coronatis, plerumque 30–40 cm. longis, 5–7 cm. latis, nervis numerosis, parallelis, plusminusve triginti quattuor. Strobilus femineus inter foliis solitarius, in pedunculo erecto, robusto, subterete, apicem versus valde carnosio-inflato, stramineo, dense sed minute lanato, usque ad 30 cm. longo, 1–1.5 cm. in diameter, cylindricus, apice apiculatus, 7–8 cm. longus, densissime brunneo-tomentellus, peltis in seriebus plusminusve sex

verticalibus, hexagonis, majoribus 8–9 mm. longis, 5–6 mm. latis; semina non visa. Strobilus masculus parvus, in pedunculo gracillimo debileque, plusminusve 15 cm. longo, 9–10 mm. in diametro, densissime brunneo-tomentellus, peltis in seriebus plusminusve octo, 4 mm. longis, 2 mm. latis.

Zamia madida is so named (Latin for “drenched”) in allusion to the extraordinarily humid forest habitat which it prefers. The forests of the Golfo de Urabá area of northwestern Colombia have one of the heaviest rainfalls in all tropical America, receiving between five and six yards of rain a year. The plant is not uncommon in the region of Mutatá, but it does not occur in colonies, as do many other species of *Zamia*. It is a majestic plant, sometimes as tall as a man, and grows erect, not sprawling, with the heavy ends of the leaves, on which the large leaflets are borne, slightly flexuous.

Zamia madida is well characterized by the very conspicuous swelling at the base of the leaflets. This swelling forms a strong collar which almost completely surrounds the apical part of the petiolule.

COLOMBIA: Departamento de Antioquia, Municipio de Mutatá, Villa Arteaga. Altitude about 150 feet. “In forest.” February 16–20, 1953. *Richard Evans Schultes & Isidoro Cabrera 18694* (TYPE in Herb. Gray).—Same locality and date. *Schultes & Cabrera 18640*. (TYPE of male inflorescence in Herb. Gray).—Same locality and date. *Schultes & Cabrera 18679*.

ARACEAE

***Anthurium apaporanum* R. E. Schultes sp. nov.**

Caudex abbreviatus, circiter 1.5 cm. in diametro. Petiolus robustior, crassus, canaliculatus, geniculo brevi instructus, usque ad plusminusve 30 cm. longus, 6 mm. in diametro. Folia firme chartacea, pallide viridia, late lanceolata, apice breviter acuminata, basi cuneata, usque ad 40 cm. longa, 12 cm. lata, nervis lateralibus primariis

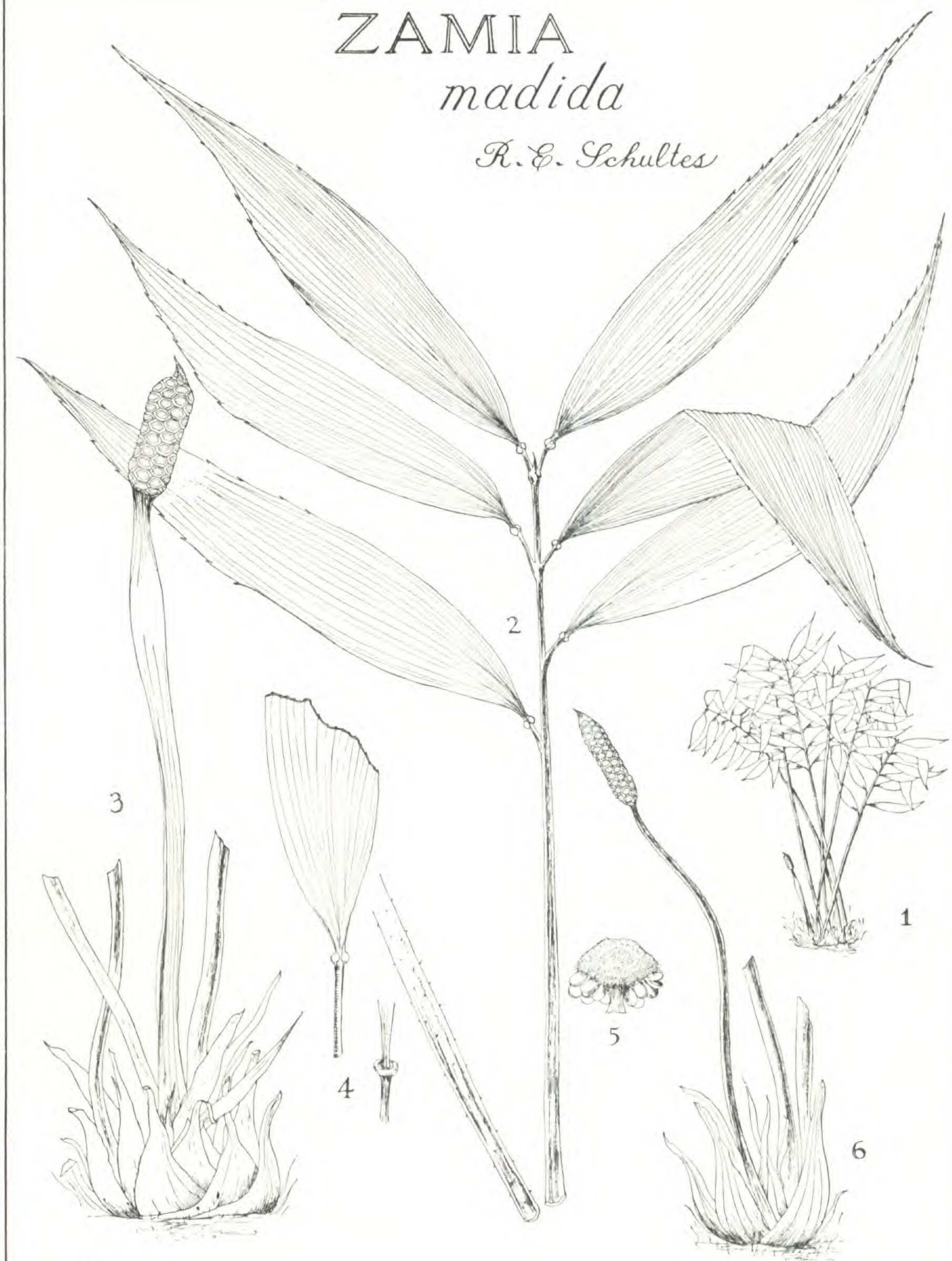
EXPLANATION OF THE ILLUSTRATION

PLATE XVIII. *ZAMIA MADIDA* *R. E. Schultes*. 1, habit sketch. 2, portion of leaf, about two fifths natural size. 3, pistillate inflorescence, about two fifths natural size. 4, basal portion of leaflet, showing collar. 5, segment of staminate inflorescence, about two and one half times natural size. 6, staminate inflorescence, about two fifths natural size.

Drawn by RUTH BARTON

ZAMIA
madida

R. E. Schultes



EXPLANATION OF THE ILLUSTRATION

PLATE XIX. ANTHURIUM APAPORANUM *R. E. Schultes*.
Habit, slightly less than one quarter natural size ; and
fertilized pistillate flower, slightly less than five times
natural size.

Drawn by RUTH BARTON



ANTHURIUM
apaporanum
R.E. Schultes

angulo 60° a costa abeuntibus, inter se 8–12 mm. distantibus et in nervum collectivum medio a margine 2–3 mm. remotum. Pedunculus ad 42 cm. longus, 8 mm. in diametro. Spatha lanceolata, 8 cm. longa, 1.5 cm. lata, apice acutiuscula, viridis. Spadix viridis, sessilis, usque ad 16 cm. longis, 15–17 mm. in diametro. Tepala omnino albido-pulverulenta, circiter 2 mm. lata, 4 mm. longa. Pistillum rufum, ovoideum, 4 mm. longum, 3 mm. in diametro.

Anthurium apaporanum appears to be nearest to the complex of *A. Harrisii* (Grah.) Endl., but several differences in floral structure and in relative size of the vegetative parts would suggest that the two concepts are best considered as distinct. In many of its vegetative characters, *Anthurium apaporanum* likewise resembles *A. napaecum* Engl., but the two are easily separated by floral differences.

COLOMBIA: Comisaría del Vaupés, Río Kananarí, Cerro Isibukurí. On sandstone cliffs. "Spadix and spathe green." August 4, 1951. Richard Evans Schultes & Isidoro Cabrera 13335 (TYPE in Herb. Gray).

***Anthurium nanum* R. E. Schultes sp. nov.**

Herba epiphytica. Caudiculus crassus, internodiis abbreviatis. Folia subcoriacea, petioli strictissimis, crassis, teretibusque, sulcatis, usque ad 2.5–3.5 cm. longis, 0.5 mm. in diametro, lamina pallide viridis, glabra lineari-lanceolata, apice acuminata, basi longe cuneata, margine inconspicue et leviter revolta, 6.5–7 cm. longa, 8–10 mm. lata, nervis crassioribus, utrinque prominentibus. Spatha membranacea, triangularis, apice crasso-apiculata, utrinque albido-pulverulenta, rosea, 9 mm. longa, basi 3–3.5 mm. lata, vivo reflexa. Spadix sessilis, cylindricus, apice truncatus, 11–12 mm. longus, plusminusve 2 mm. in diametro, rufo-purpureus.

It would appear that *Anthurium nanum*, set apart be-

cause of its small stature, as its name implies, is allied to the complex of *A. gracile* (Rudge) Engl. and to *A. fontoides* R. E. Schultes. The type specimen, while a fully mature individual, is of note because of its very diminutive size.

COLOMBIA: Comisaría del Vaupés, Río Kananarí, Cachivera Palito. Altitude about 250 m. "Epiphyte. Spathe pink. Spadix red." July 25, 1951. *Richard Evans Schultes & Isidoro Cabrera 13183* (TYPE in Herb. Gray).

***Philodendron colombianum* R. E. Schultes sp. nov.**

Herba in locis humidis crescens, usque ad $1\frac{1}{2}$ pedes alta. Folia ovata, apice sensim cuspidato-acuminata, basi cordata, usque ad 20 cm. longa, 10 cm. lata, nervis lateralibus angulo circiter 30° a costa adscendentibus, marginem versus conjunctis; petiolus apicem versus callosus, plusminusve 18 cm. longus, teres, inferne vagina obtectus. Pedunculus basi in bracteis fibrosis inclusus, plusminusve 9 cm. longus, 2 mm. in diametro. Spatha apice subacuta, intus alba sed extus purpurascens, 5 cm. longa, 3.5 cm. lata, tubus ventricosus fauce valde contractus, 3.5 cm. longus, 1–1.5 cm. in diametro. Spadix stipitate, 5–6 mm. longo suffultus, usque ad 6 cm. longus. Inflorescentiae pars feminea 2.5 cm. longa, plusminusve 11 mm. in diametro, pars mascula 2.4 cm. longa. Stamina 1 mm. longa, 1.2 mm. lata. Pistillum 1–1.2 mm. longum, 0.3 mm. in diametro. Ovarium quattuor- vel quinqueloculare.

COLOMBIA: Comisarias del Amazonas y Vaupés, Río Apaporis, Soratama (above mouth of Río Kananarí) and vicinity. Altitude about 900 feet. March 26, 1952. *Richard Evans Schultes & Isidoro Cabrera 16087* (TYPE in Herb. Gray).

***Stenospermaticum verecundum* R. E. Schultes sp. nov.**

Suffrutex parvus, in savannarum arena crescens. Cau-

dex valde abbreviatus, circiter 2 cm. crassus. Folia membranacea, atroviridia irregulariter albido-maculata, lanceolato-linguiformia, utrinque glabra, apice acutissima cum apiculo flexuoso, 13–17 mm. longo, basi inaequaliter rotundata, in petiolo 5–9 cm. longo, basi purpureo- et roseo-maculato, ad vaginam latiusculo, 7–30 mm. longo producta; lamina 11–15 cm. longa, 2.5–4 cm. lata; nervis lateralibus angulo acuto adscendentibus. Pedunculus crassus, usque ad 20–22 cm. longus sed vulgo brevior, in vagina foliacea saepe inclusus, apicem versus, 2 mm. in diametro. Spatha aperta lanceolato-elliptica, longe acuminata, usque ad 9 cm. longa, 1.5–1.8 cm. lata, utrinque viridia. Spadix cylindricus, apicem versus tenuior, stipitate robusto, brevi, minute albo-granuloso, 4 mm. longo, 4–5 mm. in diametro suffultus. Stamina filamenta late linearia, 0.5 mm. longa, antherae minutissimae. Pistilla 1 mm. longa, vertice tetragono stigmatе coronata.

The long and flexuous apicules on the leaves of this new species seem to set it apart from other concepts of *Stenospermatium*. *Stenospermatium verecundum* would appear to be nearest to *S. Ulei*, at least vegetatively, but the former has a much shorter and stouter peduncle than the latter species.

Stenospermatium verecundum is apparently endemic to the quartzitic mountains of Amazonian Colombia, where it grows in white sandy savannahs, under conditions of extreme xerophytism. It is often associated in the field with the lichen *Cladonia*, as illustrated in the accompanying photograph (Plate XXII).

The specific name, meaning “modest,” refers to its inconspicuous habit of growth.

COLOMBIA: Comisariás del Amazonas y Vaupés, Río Piraparaná, Cerro E-ree-eé-kö-mee-ö-kee. “Terrestrial. On sterile sand. Spathe green on both sides, spadix white. Leaves green on both sides. Base of stem mottled purple-brown and pink.” September 18, 1952. *Richard Evans Schultes & Isidoro Cabrera 17496* (TYPE in Herb. Gray).

***Urospatha somnolenta* R. E. Schultes sp. nov.**

Herba paludosa saxicola, usque ad 2.5–3 pedes alta. Rhizoma spongiosum. Folia erecta, papyracea, hastato-sagittata, latiloba, supra atroviridia, infra vix pallidiora, utrinque glabra, nervis utrinque prominentibus; lobo antico lanceolato-triangulari, apice acuminato, usque ad 25 cm. longo, parte inferna 10 cm. lato; lobis lateralibus paullo longioribus, oblongo-lanceolatis, sinu profunde parabolico distantibus, costis posticis in sinu 2 cm. denuclatis, nervis lateralibus primariis lobi antici duo superioribus angulo acuto adscendentibus in apice exeuntibus, infimo juxta margine fere totius lobi procurrente, nervis loborum lateralium superioribus adscendentibus marginem versus conjunctis. Petiolus apicem versus callosus, parte callosa geniculata, plusminusve 3 cm. longa, usque ad 85–90 cm. longus, aliquid turgido-carnosus, atroviridis et conspicue purpureo-maculatus. Pedunculus robustior, turgido-carnosus, colore petiolo similis, usque ad 55–60 cm. longus, basi 1 cm. in diametro. Spatha anguste lanceolata, longe acuminata, statu juvenili valde spiraliter contorta adulta apicem versus contorta, extus atropurpurea vel nigro-purpurea, intus atroviridis, 15–18 cm. longa, basi 3 cm. lata. Spadix purpureus, apparenter non stipitatus, usque ad 5–6 cm. longus, 3–3.5 cm. in diametro, maturitate valde reflexus. Flores usualiter quinque-tepali, purpurei. Ovarium obovoideum, vulgo biloculare. Bacca obovoidea, 6–7 mm. longo, 4.5 mm. crassa. Semina subreniformia, laeviter rufo-punctulata.

Urospatha somnolenta resembles *U. sagittifolia* (Roddach.) Schott, *U. Spruceana* Schott and *U. decipiens* Schott, both of which occur in the northwest Amazon.

Urospatha somnolenta appears to be a more robust plant than is generally reported for *U. sagittifolia* and its varieties. It is rather outstanding in its choice of habitat—sandy and boggy holes and crevasses in rocks in the vicin-

ity of waterfalls. It is likewise noteworthy in the strongly drooping position which the ripening fruiting head gradually assumes. The very young spadix stands perfectly erect, but, as the fertilized ovaries enlarge, the spadix bends and finally droops in a deeply nodding position, as shown in the accompanying habit photographs. I have not seen this peculiarity reported for the other species of *Urospatha*; none of the herbarium specimens which I have studied give indication of it, nor have I observed it in any other species of the genus which I met in the field. The specific epithet *somnolenta* (Latin meaning "full of sleep") refers to this apparently unusual nodding position of the mature spadix.

COLOMBIA: Comisariías del Amazonas y Vaupés, Río Apaporis, Raudal Yayacopi (La Playa) and vicinity. Altitude about 800 feet. "In damp crevasses in rocks, in sand and stagnant water. Stem mottled green-purple. Spathe dark green inside, dark purple-black outside. Fruit dark purple-green." February 16, 1952. *Richard Evans Schultes & Isidoro Cabrera 15402* (TYPE in Herb. Gray).

ERIOCAULACEAE

Eriocaulon vaupesense *Moldenke sp. nov.*

Herba parva annua; foliis caespitosis tenuiter membranaceis fragilibus graminodeis 3.5–5.5 cm. longis fenestratis glabris; pedunculis 7–14 cm. longis solitariis gracillimis stramineis tricostatis; vaginis arcte adpressis 2–2.5 cm. longis glabris; capitulis parvis hemisphaericis albis 3–5 mm. latis; bracteolis late obovatis crassis stramineis imbricatis nitidis ca. 1.6 mm. longis ad apicem rotundatis.

Small, probably annual, herb; stem much abbreviated or obsolete; leaves tufted, very thin-membranous and fragile, apparently erect when fresh, spreading or reflexed in age, linear and grass-like, uniformly pale-green on both surfaces, 3.5–5.5 cm. long, 1.5–2 mm. wide below the middle, attenuate-subulate at the apex, fenestrate, gla-

brous on both surfaces; peduncles usually one per plant, 7–14 cm. long, very slender, stramineous, 3-costate, glabrous; sheath slender, closely appressed, 2–2.5 cm. long, glabrous throughout, split at the apex, the blade about 5 mm. long, erect or the tip very slightly spreading, subulate-tipped, glabrous; heads small, hemispheric, white, 3–5 mm. wide; involucral bractlets broadly obovate, thick-textured, stramineous, closely appressed and imbricate, about 1.6 mm. long and wide, shiny, rounded at the apex, glabrous; receptacular bractlets similar but appressed, white-pilose on the back and shortly white-barbate towards and at the apex with stiffly erect hairs; staminate florets: sepals 3, connate at the base, cuneate-spathulate, about 0.8 mm. long and 0.4 mm. wide, rounded and white-barbate at the apex with stiffly erect hairs; petals 3, connate into a slender stramineous tube about 0.8 mm. long, the free tips densely white-barbate like the sepals; stamens 6; filaments very short, about 0.16 mm. long, glabrous; anthers oblong, dark-brown, about 0.2 mm. long and 0.12 mm. wide; pistillate florets not seen.

Since the type locality of *Eriocaulon vaupesense* lies on the boundary between Colombia and Venezuela, this species probably occurs also in Venezuela.

COLOMBIA: Comisaría del Vaupés, Río Guainía, Caño del Caribe (between Isla del Venado and San José) and vicinity. Altitude 850–900 feet. Lat. $2^{\circ}45'$ N, Long. $67^{\circ}50'$ W. November 2, 1952. *Richard Evans Schultes, Richard E. D. Baker & Isidoro Cabrera 18274* (TYPE in U.S. Nat. Herb.).

ARISTOLOCHIACEAE

***Aristolochia georgica* R. E. Schultes sp. nov.**

Frutex scandens, gracilis. Caulis volubilis; rami volubilis, teretes, striolati, cum cortice fusco-brunneo, tenui, minutissime puberulente. Folia exstipulata, coriacea vel firme chartacea, oblonga, apice breviter apiculata, basi

EXPLANATION OF THE ILLUSTRATION

PLATE XX. *PHILODENDRON COLOMBIANUM* *R. E. Schultes*.
Habit, approximately two fifths natural size; and fertilized pistillate flower, approximately nine times natural size.

Drawn by RUTH BARTON



PHILODENDRON
colombianum
R. E. Schultes

⌘

EXPLANATION OF THE ILLUSTRATION

PLATE XXI. STENOSPERMATIUM VERECUNDUM *R. E. Schultes*. 1, habit, approximately one third natural size. 2, inflorescence, approximately two thirds natural size.

Drawn by RUTH BARTON

STENOSPERMATIUM

verecundum

R. E. Schultes



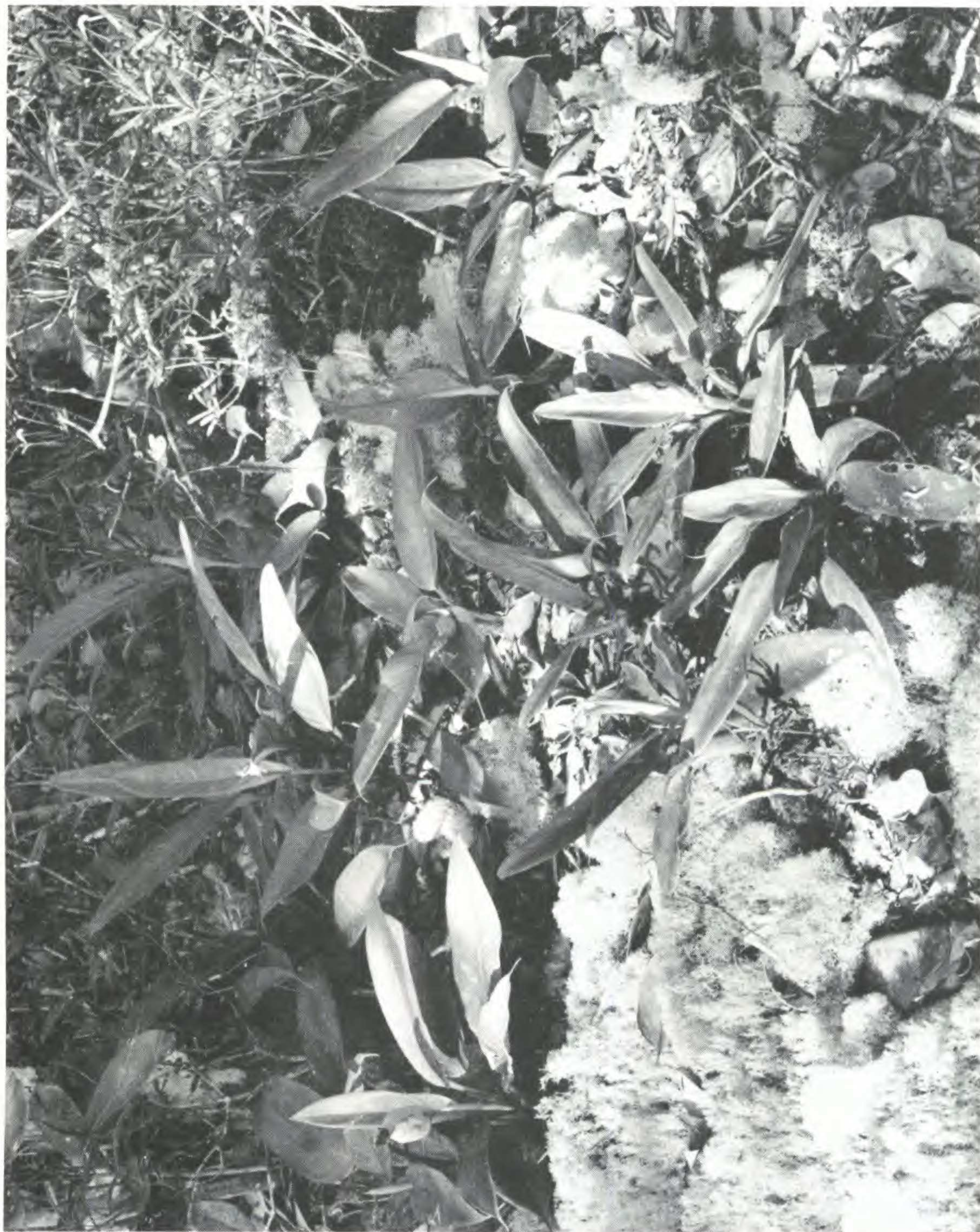
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EXPLANATION OF THE ILLUSTRATION

PLATE XXII. STENOSPERMATIUM VERECUNDUM *R. E. Schultes*. Habit photograph of the colony from which the type collection was made.

Photograph by RICHARD EVANS SCHULTES

PLATE XXII



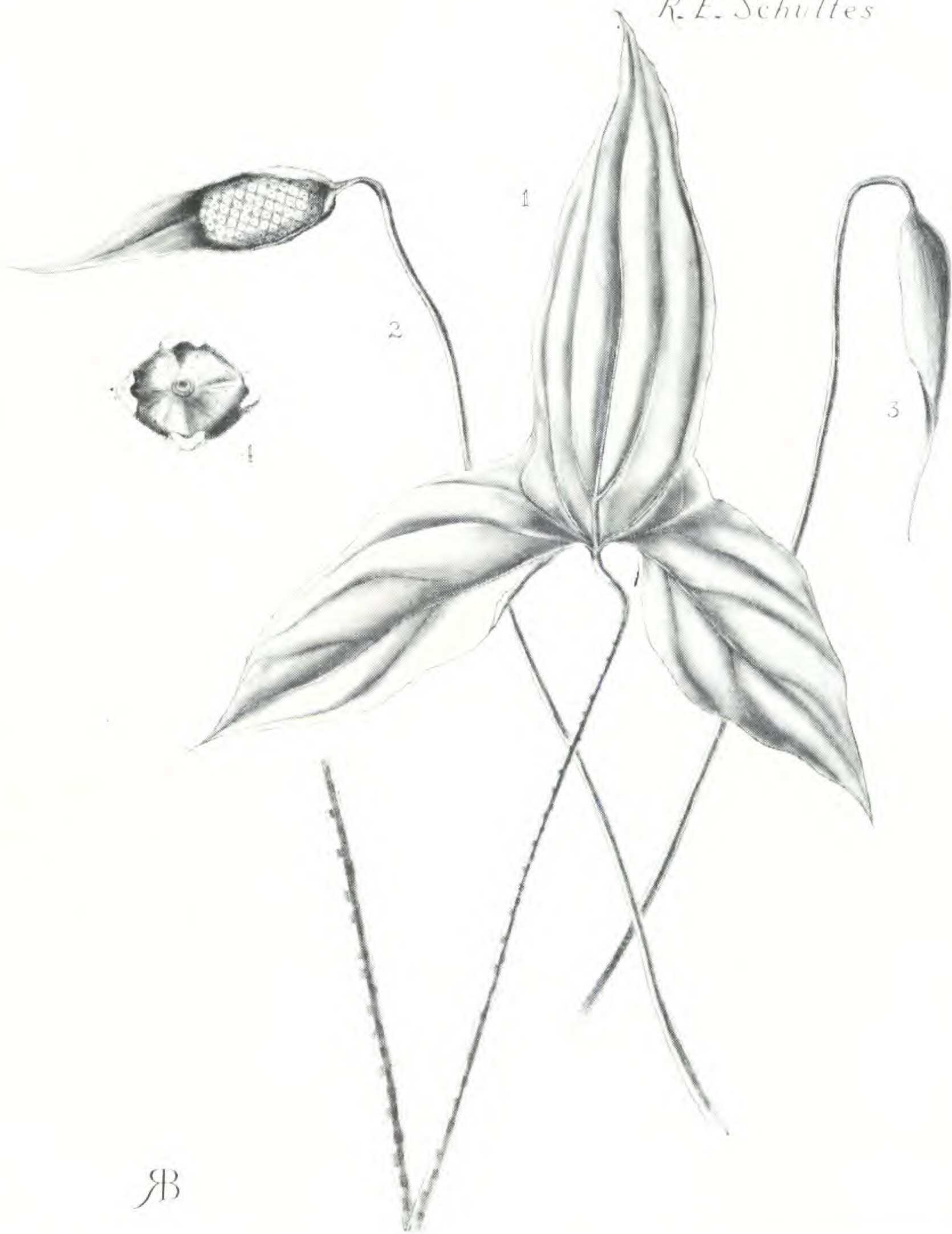
EXPLANATION OF THE ILLUSTRATION

PLATE XXIII. *UROSPATHA SOMNOLENTA* R. E. Schultes.
1, leaf, approximately one sixth natural size. 2, ripening spadix with spathe, approximately one sixth natural size. 3, position of fully ripened spadix. 4, fertilized pistillate flower, approximately three and one half times natural size.

Drawn by RUTH BARTON

UROSPATHA *somnolenta*

R. E. Schultes



RB

EXPLANATION OF THE ILLUSTRATION

PLATE XXIV. *UROSPATHA SOMNOLENTA* *R. E. Schultes*.
Habit photograph of the colony from which the type
collection was made.

Photograph by RICHARD EVANS SCHULTES

PLATE XXIV



EXPLANATION OF THE ILLUSTRATION

PLATE XXV. *UROSPATHA SOMNOLENTA* *R. E. Schultes.*
Ripening spadix of the type plant.

Photograph by RICHARD EVANS SCHULTES

PLATE XXV



valde contorta, petiolata (petiolo plusminusve 1.5–2 cm. longo, pulverulenta-puberulente), nervis lateralibus plerumque quattuor, supra vivo atroviridia, siccitate straminea, nitidissima, nervis non conspicue elevatis, glaberrima, subtus vivo pallide viridia, nervis omnibus promi-nenter elevatis, minutissime albido-tomentulosa, cum petiolo usque ad 12–14 cm. longa, plerumque plusminusve 4 cm. lata. Flores in racemis congestis, multifloribus et axillaribus, plusminusve 5.5 cm. longis, pedunculo minutissime pulverulento, gracile, usque ad 3–3.5 cm. longo. Perianthii pars inferna valde ovoideo-dilatata, usque ad 20 mm. longa, 5 mm. in diametro, extus minutissime pulverulens, intus carnosus-verrucosus; tubus cylindricus, 8–12 mm. longus, plusminusve 2 mm. in diametro, apicem versus saepe paullo dilatatus; limbus altero latere expansus, altero truncatus, membranaceus, intus distanter hirtellus, brunneo-viridis, extus minutissime pulverulentus, brunneo-purpureus, oblongus, apice rotundatus et saepe minute apiculatus, apiculo dense aureo-tomentoso, usque ad 22 mm. longus, 10 mm. latus. Columna genitalis 3 mm. longa, breviter stipitata, per dimidium sex-divisa; lobis pseudo-stylinis acutis. Stamina sex in serie unica, columnae adnata, antheris linearibus, usque ad 0.8 mm. longis, longitudinaliter dehiscen-tibus. Fructus late ellipsoideus, usque ad 8 cm. longus, 3.5 cm. in diametro, pedunculo usque ad 2.5 cm. longo. Semina cuneato-subquadrata, fusco-cinerea, plusminusve 10 mm. lata, 7 mm. longa, altero latere aliquid nitida, altero dense papillosa.

Aristolochia georgica, so named because it prospers most successfully in disturbed agricultural plots near human habitation, belongs to Hoehne's section *Exstip-ulatae*. It does not appear to resemble closely any species hitherto described. Vegetatively, it suggests *Aristolochia cornuta* Mast. of Amazonian Brazil and Peru, but there

are many major floral differences to separate the two concepts. It also looks vegetatively rather like *Aristolochia iquitensis* O. C. Schmidt, but the lip of the flower is very different.

Of interest as a peculiarity of *Aristolochia georgica* is the curious dense, golden, tomentose apicule terminating the broad, oblong, rounded lip. The species is unusual in the *Exstipulatae* in having a many-flowered inflorescence.

COLOMBIA: Comisarias del Amazonas y Vaupés, Río Apaporis, Soratama (between Río Kananari and Río Pacoa). Altitude about 250 m. "Vine. Flowers mottled green and brownish purple. Puinave name = *too-cheé-ka-pee*. On flood-bank." August 27, 1951. *Richard Evans Schultes & Isidoro Cabrera 13737* (TYPE in Herb. Gray).

***Aristolochia xerophytica* R. E. Schultes sp. nov.**

Suffrutex scandens, in locis arenosis maxime calidis crescens. Caulis volubilis; rami volubiles, teretes, substriolati, cum cortice fusco-brunneo, tenui, minutissime puberulente. Pseudostipulae foliis similes sed multo parviores, usque ad 1.5 cm. longae. Folia exstipulata, coriacea vel firme chartacea, oblongo-cordata, basi cordiforme incisa, apice subacuta, petiolata (petiolo 1–3 cm. longo, pulverulento-puberulente), nervis lateralibus plerumque duo, supra apparenter atroviridia, minutissime et irregulariter scrobiculata, nervis non conspicue elevatis, subtus pallide viridia vel cinereo-viridia, minute et dense hirsuta, cum petiolo usque ad 8–9 cm. longa, parte mediana 1.5–3 cm. lata. Flores apparenter semper solitari; pedunculo gracile, pulverulento, usque ad 3 cm. longo. Perianthii pars inferna valde subglobosa vel ovoideo-dilatata, 0.7–10 mm. in diametro, extus fusca, glabra, intus aliquid verrucosa; tubus cylindricus, 9–10 mm. longa, 4 mm. in diametro, apicem versus valde infundibuliformis; limbus altero latere valdissime expansus, altero truncatus, membranaceus, intus subglabrus sed apicem versus albido-hirsutissimus, apparenter flavo-

EXPLANATION OF THE ILLUSTRATION

PLATE XXVI. *ARISTOLOCHIA GEORGICA* *R. E. Schultes*.
Flowering and fruiting branch, approximately one
half natural size.

Drawn by RUTH BARTON

ARISTOLOCHIA

georgica

R. E. Schultes



brunneus, extus subglabrus, lanceolatus, apicem versus paullo dilatatus, apice ipso abrupte et breviter acuminatus, usque ad 32 mm. longus, basi 10 mm. latus. Columna genitalis 2.5–3 mm. longa, non stipitata, apice sex-divisa; lobis pseudostylinis obtusis, 0.7 mm. longis. Stamina sex in serie unica, columnae valde adnata, antheris linearibus, plerumque 2 mm. longis, longitudinaliter dehiscentibus. Fructus adhuc ignotus.

Aristolochia xerophytica does not seem to match closely any of the species included in Hoehne's *Pseudostipulosae*. Except for its foliaceous stipules, it would seem vegetatively to resemble most closely *Aristolochia rumicifolia* Mart. & Zucc., but the flowers of the two species are very dissimilar.

As the specific name implies, *Aristolochia xerophytica* grows in a hot, dry and sandy region, a rather unusual habitat for members of this genus.

PERU: Provincia de Jaen, Departamento de Cajamarca. Near Junta on Huancabamba River. "Herbaceous vine, growing in very hot, dry, sandy soil. Flower pelican-shaped, brown." August 3, 1943. E. L. Fvinger 540 (TYPE in U.S. Nat. Herb. 1953576; 2105024).

LEGUMINOSAE

The descriptions and discussions of *Calliandra*, *Cassia*, *Inga*, *Jacqueshuberia* and *Macrolobium* have been contributed by Dr. Richard S. Cowan; of *Tachigalia* by Dr. John Dwyer.

***Calliandra vaupesiana* Cowan sp. nov.**

Arbuscula, ramulis albo-pilosulis et brunneo-puberulis; stipulae persistentes, 4–5 mm. longae, 1.5 mm. latae, lanceolatae, acutae, externe minuto-strigulosae, intus glabrae; petioli 5–7 mm. longi, eglandulares, albo-strigulosi vel -puberuli et brunneo-puberuli, rhachibus 13–33 mm. longis, albo-strigulosi vel -puberuli et brunneo-puberuli; pinnae 3–6-jugatae, anguste oblongae, petiolis

secundariis 1 mm. longis, minute albo-strigulosis, rhachibus secundariis 4.5–9 cm. longis, minute albo-strigulosis; foliola sessilia, 56–70-jugata, approximata, anguste oblonga, haud falcata, apice obtusa ad subacuta, basaliter excentrico-rotundata, glabra, margine minute parceque ciliolato, obscure 2–3-nervia infra, supra laevia, pinnarum foliolis mediis, 7–12 mm. longis, 1–1.5 mm. latis; inflorescentiae axillares in axillis foliorum superiorum et terminales, capitatae, pedunculo 18–22 mm. longo, minute albo-striguloso, floribus sessilibus, rubris, perianthio externe albo-sericeo (corolla densissime sericea), intus glabro; calyx cupularis, tubo ca. 3.5 mm. longo, lobis 0.6–1 mm. longis, ovatis, acutis; corolla infundibuliformis, tubo ca. 5 mm. longo, lobis ovatis, 3 mm. longis, 2 mm. latis, acutis; filamenta 5 cm. longa, glabra; ovarium densissime sericeum, stylo glabro; fructus 90 mm. longus, 12 mm. latus, oblongus, ad basim angustior, velutinus.

The specific epithet, derived from the name of the geographic region from which these four collections were taken, seems appropriate in light of the apparent restricted distribution of many species of *Calliandra*.

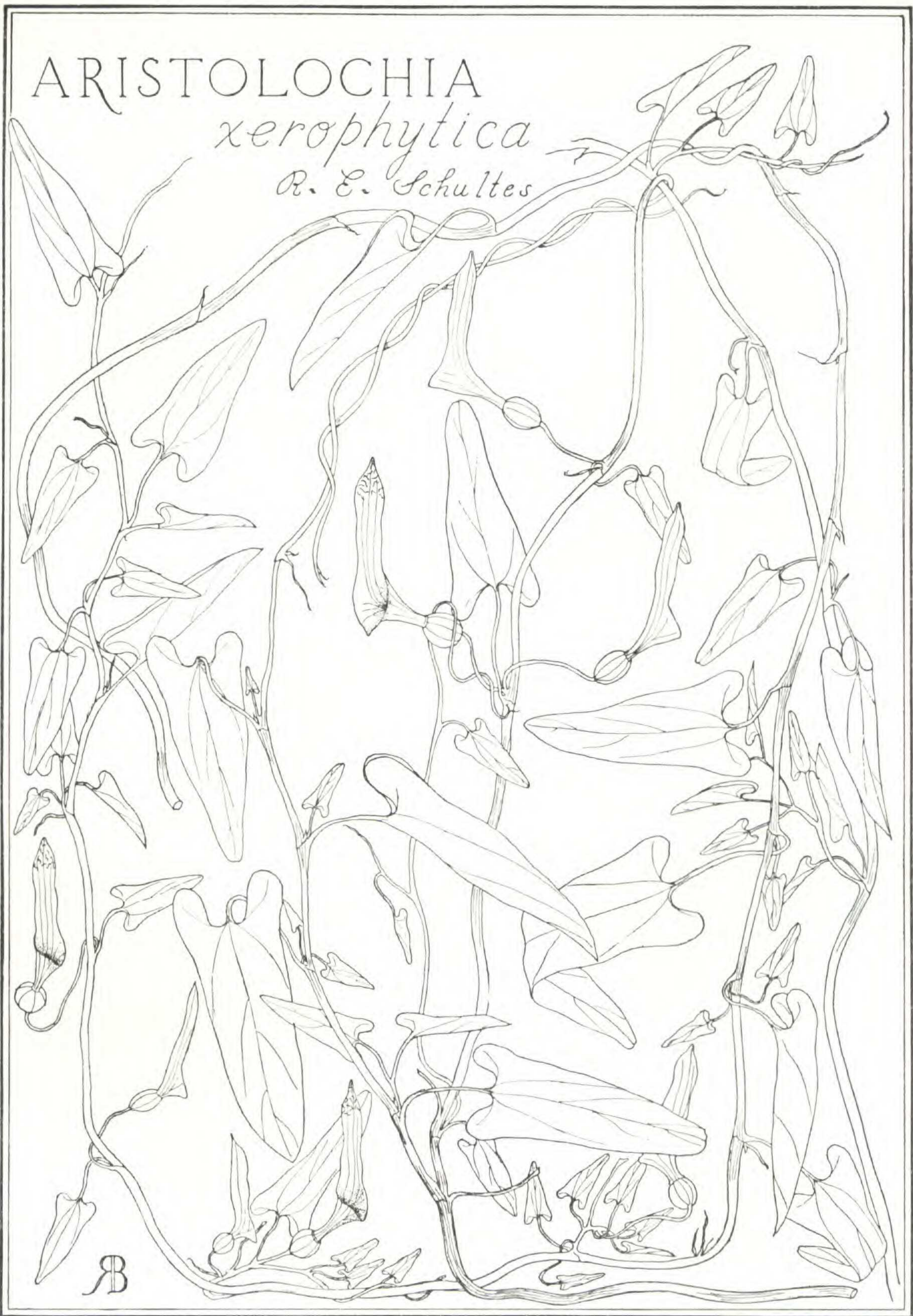
The new species does not seem to have any very close relatives; it may be recognized by the large number of small, subglabrous leaflets, the few pairs of pinnae, and the rather large, sericeous flowers.

COLOMBIA: Comisaría del Vaupés, Río Kuduyarí, Cerro Yapobodá. Sabanas sobre piedras areniscas. Altitude about 450 m. October 3–4, 1951. *Richard Evans Schultes & Isidoro Cabrera 14203* (TYPE in U.S. Nat. Herb. 2171380).—Comisaría del Vaupés, Río Paraná Pichuña. Altitude about 700 ft. June 1953. *Schultes & Cabrera 19915*.—Comisaría del Vaupés, Río Karurú, Mesa de Yambí, Savannah de Gooranhoo-dá. Altitude 950–1000 ft. April 1953. *Schultes & Cabrera 19152*.—Comisaría del Vaupés, Río Kuduyarí, Yapobodá. Quartzite savannah near headwaters. Altitude 900–1000 ft. April 1953. *Schultes & Cabrera 19985*.

EXPLANATION OF THE ILLUSTRATION

PLATE XXVII. *ARISTOLOCHIA XEROPHYTICA* *R. E. Schultes*. Flowering branch, approximately one half natural size.

Drawn by RUTH BARTON



Cassia gigantifolia (*Britt. & Killip*) *Cowan comb. nov.*

Chamaefistula gigantifolia Britton & Killip, N. Y. Acad. Sci. 35 (1936) 171.

This collection has been compared with the type (*G. Klug* 1622) at the New York Botanical Garden, and there is little doubt of their conspecificity, although the petals of the *Schultes* collection are larger; those on the type are up to 2 cm. long, and those in the present collection are up to 3.5 cm. long.

COLOMBIA: Comisaria del Vaupés, Río Negro, San Felipe and vicinity. *Richard Evans Schultes, Richard E. D. Baker & Isidoro Cabrera* 17964.

Inga involucrata *Cowan sp. nov.*

Arbuscula, ramulis juvenilibus strigosis sed mox glabrescentibus; stipulae persistentes, subcoriaceae, 15–23 mm. longae, 10–12 mm. latae, ovatae, acuminatae, glabrae; folia glabra, 3-jugata, petiolo 47 mm. longo, alis oblongis, 41 mm. longis, 6 mm. latis, glandula disciformi, sessili, 3.5 mm. diametro, rhache 18 cm. longa, alis ob lanceolatis, 75–85 mm. longis, 6 mm. latis; foliola subcoriacea, discolora, elliptica, base obtusa ad subobtusa, apice acuta, faciebus ambobus costa salienti sed infra validiore, venis primariis 10–15 costae utroque latere, supra leviter impressis, infra valde salientibus, venulis obscuris, foliolorum jugo inferiore 16.5 cm. longo, 7.5 cm. lato, jugis superioribus ca. 25–30 cm. longis, 9.5–12 cm. latis; inflorescentiae axillares, capitatae, pedunculo 7.5–9 cm. longo, sparse strigoso, glabrescenti, floribus subsessilibus, viridibus, involucratis (bracteis imbricatis, multis, sparse strigosis ad glabris subtendentibus), bracteis exterioribus ovatis, acutis, 7–10 mm. longis, 6.5–8.5 mm. latis, bracteis interioribus ellipticis, acutis, ca. 8–10 mm. longis, 5 mm. latis, pedicellis 1.5 mm. longis, strigosis; calycorum tubus glaber, ecostatus, subcylindricus,

sparse strigosus, 21–23 mm. longus, apice 8–9 mm. diametro, calycorum dentibus triangularibus, 3 mm. longis, strigosis; corolla immatura, apice strigosa; gynoecium glabrum.

Inga involucrata is not closely related to any other known species. It is abundantly distinct by virtue of its persistent, foliaceous stipules and bracts; the latter form a conspicuous involucre (hence the specific epithet) at the apex of the peduncle, subtending the subsessile flowers. Another very striking feature of the new species is the very large calyx; the only species which shares this character is *Inga inflata* Ducke, an Amazonian species, but this probably does not indicate very close relationship, for in all other respects the two species are quite dissimilar.

COLOMBIA: Departamento de Antioquia, Golfo de Urabá, Municipio de Mutatá, Villa Arteaga. Altitude about 150 ft. February 16–20, 1953. *Richard Evans Schultes & Isidoro Cabrera 18651* (TYPE in U.S. Nat. Herb. 2172228).

***Inga longifoliola* Cowan sp. nov.**

Arbuscula vel arbor ad 3 m. alta, ramulis minute strigulosis, albo-lenticellatis; stipulae caducae, ca. 2.5 mm. longae, 0.7 mm. latae, acutae, anguste ellipticae; folia parce minuto-strigulosa, petiolis teretibus, 20–22 mm. longis, rhachibus 24–33 mm. longis, teretibus ad marginatis, glandulis sessilibus et ca. 2 mm. diametro; foliola 2-jugata, raro unijugata, petiolulis 2–2.5 mm. longis, laminis 13–17.5 cm. longis, 3–5 cm. latis, anguste ellipticis ad lanceolato-ellipticis, base acutis, apice longo-acuminatis, faciebus ambobus parce strigulosis, supra metallicis et nitidis, costa salienti, venis primariis ca. 15-jugatis, supra planis, infra salientibus; inflorescentiae axillares, pedunculo (30–) 45–55 (–62) mm. longo, minute striguloso, axe ca. 12–15 mm. longo, minute striguloso, bracteis caducis, lanceolatis, acutis, 2 mm. longis et 1 mm. latis, externe minute strigulosis, intus glabris,

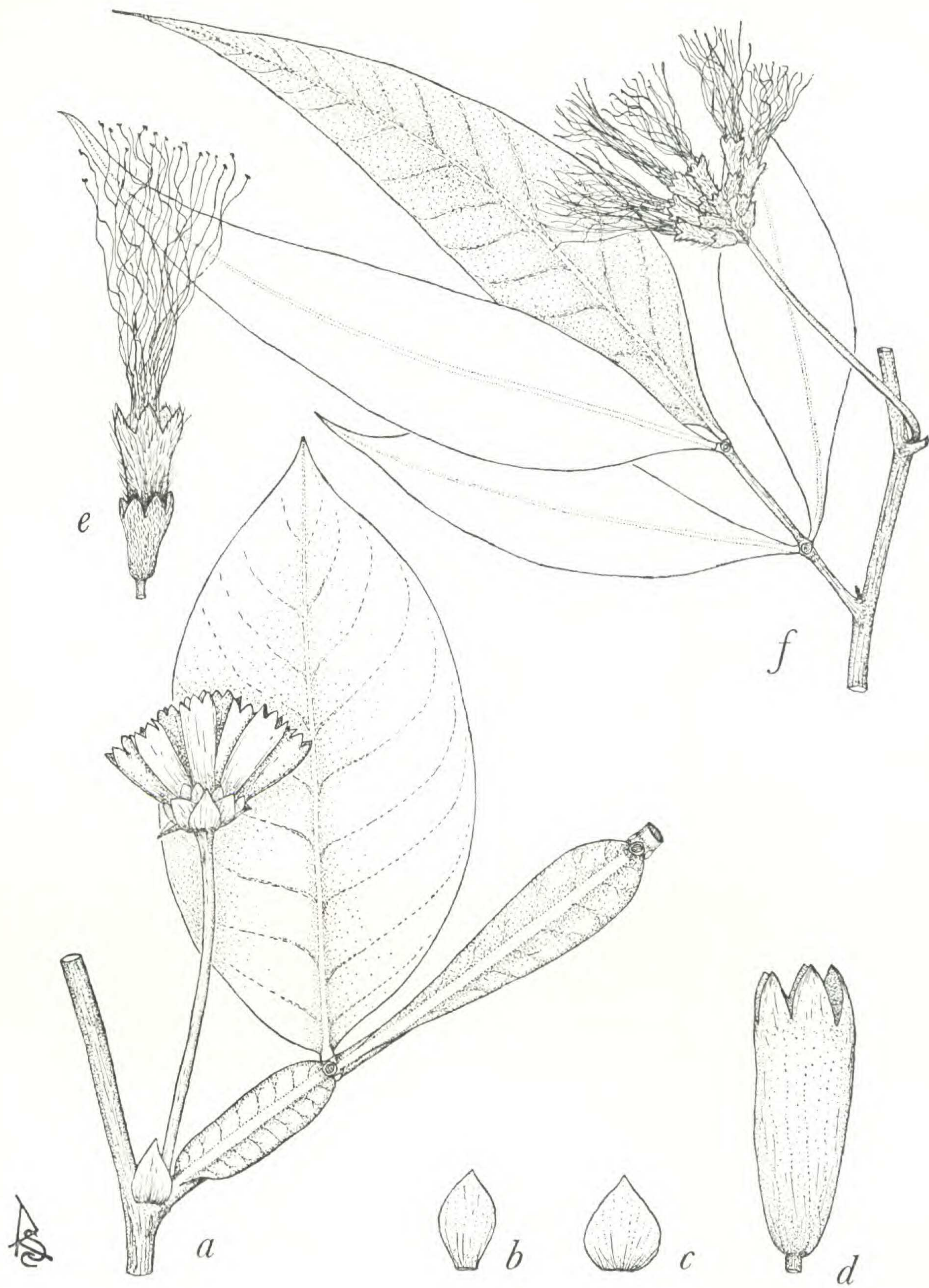
EXPLANATION OF THE ILLUSTRATION

PLATE XXVIII. a-d, *INGA INVOLUCRATA* Cowan. a, habit, one half natural size. b, calyx, one and one half times natural size. c, outer bract of inflorescence, one and one half times natural size. d, inner bract, one and one half times natural size.

e-f, *INGA LONGIFOLIOLA* Cowan. e, habit, one half natural size. f, one flower, one and one half times natural size.

Drawn by RICHARD S. COWAN

PLATE XXVIII



pedicellis 1.5–2 mm. longis, minute strigulosus; calyx brevi-cylindricus, 7–9 mm. longus, strigulosus, tubo 5–6 mm. longo, lobis triangularibus, 2–3.5 mm. longis, acutis; corolla villosa-sericea, 14–18 mm. longa, tubo 11–14 mm. longo, ad apicem dilatato, lobis lanceolatis ad ovatis, acutis, 3–4 mm. longis; filamenta ca. 35–40 mm. longa, tubo 15–20 mm. longo, incluso vel parce exserto; gynoecium glabrum.

The long, narrow leaflets of the new species provide the basis for the specific epithet. It is probably not closely related to *Inga strigillosa*, but it has many characters in common with this species. Both have terete petioles and rhachis (terete to marginate rhachis in the new species), the leaflets of both are in two pairs and they have a metallic lustre on the upper surface, the pubescence is alike, and the inflorescence is very similar. The two species differ in the size of all the flower parts and the width-length ratio and the shape of the leaflets.

COLOMBIA: Comisaría del Vaupés, Río Apaporis, Jinogojé (at mouth of Río Piraparaná) and vicinity. "Bush. Flowers white." September 25, 1952. *Richard Evans Schultes & Isidoro Cabrera 17609* (TYPE in U.S. Nat. Herb. 2172944).—Same locality. June 1952. *Schultes & Cabrera 16677*.—Same locality. July 1952. *Schultes & Cabrera 19807*.—Comisaría del Amazonas, Río Caquetá, La Pedrera and vicinity. May 1952, *Schultes & Cabrera 16382*.

***Jacqueshuberia amplifoliola* Cowan sp. nov.**

Arbor probabiliter, ramulis juvenilibus parce strigulosus; petioli 3.5–5 cm. longi, parce strigulosi, rhachibus 5–7 cm. longis, marginato-canaliculatis, parce strigulosus; pinnae 3-jugatae, petiolis secundariis 10 mm. longis, rhachilibus 5.5–8 cm. longis, marginato-canaliculatis, parce strigulosus; foliola glabra, coriacea, supra nitida, 6–8-jugata, sessilia, 18–28 mm. longa, 8–15 mm. lata, oblonga, base inaequilateralis et acuta, apice rotundata retusaque, costa plana, venulis obscuris; inflorescentiae

terminales, composito-racemosae, ca. 35–40 cm. longae, parce strigulosa, bracteis deciduis, lanceolatis, acumina-tis, 3.5 mm. longis; pedicelli 17–20 mm. longi, graciles, parce strigulosi, hypanthio 4–4.5 mm. longo, cupulare; sepala 5, externe strigulosa, ciliolata, duo late triangu-laria, 3.5–4 mm. longa, 4.5 mm. lata, cetera sepala ovalia, 5–5.5 mm. longa, 4–4.5 mm. lata, apice rotundata; pe-tala 5, ovalia, ciliolata, externe ad basem parce strigulosa, intus glabra, 6.5–7 mm. longa, 4.5 mm. lata; filamenta ca. 30 mm. longa, base villosa, tubo inaequale 10 mm. longo cohaerenti, antheris oblongis, 5.5–6 mm. longis, mucro 0.5 mm. longo praedito; stigma capitellatum, stylo glabro, ca. 10 mm. longo, gracili; ovarium ad mar-ginem sparse strigulosum vel glabrum, lateraliter pro-funde unisulcatum.

There certainly is no difficulty in distinguishing this species from the two previously described ones. Those have very numerous, small leaflets and *Jacqueshuberia amplifoliola* (as the epithet implies) has relatively very large and fewer leaflets; there are also abundant floral characteristics to separate the species. The nearest rela-tive of the new one is *Jacqueshuberia quinquangulata* which has pubescent ovaries, deeply sulcate branchlets, etc., in addition to the very different leaves.

COLOMBIA: Comisaría del Vaupés, Río Kubiyú, Cerro Kañendá. Savannah about 15 miles upstream from mouth. Quartzite base. Alti-tude about 800–900 ft. November 10, 1952, *Richard Evans Schultes & Isidoro Cabrera 18402* (TYPE in U.S. Nat. Herb. 2195820).—Same lo-cality and date. *Schultes & Cabrera 18376*.

Macrolobium microcalyx *Ducke* var. **minimum**
Cowan var. nov.

A var. *microcalyce* ramulis puberulis, foliis 2–3-jugatis, rachibus 7–17 mm. longis, canaliculatis, foliolis ad basim inaequilateralibus, latere superiore acuto, latere inferiore obtuso, infra glaucis, bracteolis glabris intus, extus pu-

berulis, 2 sepalis adaxialibus saepe ad apicem cohaerentibus, petalarum lamina glabra, ovario marginaliter villoso differt.

The differences separating this variety from the typical one are not strikingly obvious, but they are sufficiently important to justify recognition. The epithet is intended to convey the impression that the new variety is a smaller form of *Macrolobium microcalyx*. The leaflets of this new variety are mostly in two or three pairs, and most of the leaflets are smaller than those characteristic of the typical variety. The under surfaces of the leaflets are glaucous, the bracteoles are glabrous on the inner surface and the ovary is marginally villose instead of completely villose as in the typical variety.

COLOMBIA: Comisaría del Vaupés, Río Kananarí, Cerro Isibukurí. Piedra de arenisca. Altitude 250–700 m. October 28, 1951. *Richard Evans Schultes & Isidoro Cabrera 14456* (TYPE in N.Y. Bot. Gard.).

Tachigalia Schultesiana Dwyer *sp. nov.*

Arbores magnae; virgae teretes minute velutinae; stipulae non visae; folia ad 20 cm. longa; petioli graciles, 0.2–0.4 cm. lati, dense pubescentes vix canaliculati myrmecodomatium oblongo, ad 4 cm. longo, ad 1.5 cm. lato, saepe infra primum foliolorum jugum constructo; rachides graciles ad 0.15 cm. lati, dense pubescentes; petioluli dense pubescentes ad 0.3 cm. longi; foliola 8–10-jugata, tenui-coriacea minute puberula supra dense velutina infra (praecipue in costa venisque) inaequilateraliter angusto-oblonga, 2.5–8 cm. longa, 1–2.3 cm. lata, apice obtusa ultime distincte acuminata, costa prominula venis principalibus 6–10 supra prominulis subevanescentibus infra subprominentibus subrigidis arcuato-ascendentibus, marginibus revolutis; inflorescentiae dense velutinae, racemis ad 18 cm. longis rhachidibus circ. 0.2 cm. in medio latis, inferioribus evidenter arcuato-ascendentibus

superioribus laxioribus et gradatim brevioribus, floribus multis mox deciduis; bracteolae mox deciduae lanceolatae, ad 6 mm. longae, ad 2 mm. latae; pedicelli ad 1.5 mm. longi; calyx receptaculi inaequilateraliter cupuliformis pariete circ. 0.35 mm. crasso extus dense pubescente; sepala tenui-carnosa oblonga vel ovata-oblonga, ad 4 mm. longa, 3–3.2 mm. lata, utrinque dense lanulosa comis paucis parvis rubescentibus corporibus mistis, marginibus villosulis; petala in vivo lutea oblonga, 4–5 mm. longa, basi unguiculata villosa intus praeter margines (extus comis paucis basi) venis evidentibus; filamenta subulata, 4–7.5 mm. longa, 0.3–0.35 mm. basi lata, villosa basi comis solum intus dispositis, antheris circ. 1.3 mm. longis; stipes ovarii 1.3–2.7 mm. longus, aureo-villosus, ovario ad 3 mm. longo, circ. 1.5 mm. lato, dense aureo-villoso stylo ad 4 mm. longo, ovulis 6–8; fructus non visi.

Tachigalia Schultesiana, named in honor of one of the collectors of the type material, is marked by multijugate leaves. Only two other species of the genus, *Tachigalia polyphylla* Poepp. & Endl. and *T. multijuga* Benth., have numerous pairs of leaflets. The smaller flowers of the new species, with uniformly thick filaments of the stamens, suggest immediately a close relationship with *Tachigalia polyphylla* of Amazonian Brazil.

A number of floral characters distinguish *Tachigalia Schultesiana* from *T. polyphylla*: the receptacle-cup is cupuliform in outline rather than oblong-rotund, the hairs of the petals are subappressed, fewer, and do not extend to the margins, the anthers are longer, the stipe of the pistil is thicker and much longer at maturity, and the ovarian hairs are frequently fewer along the two longitudinal areas of the valves, thus giving the ovary a striate appearance.

Occasional petals show small and scattered glandular

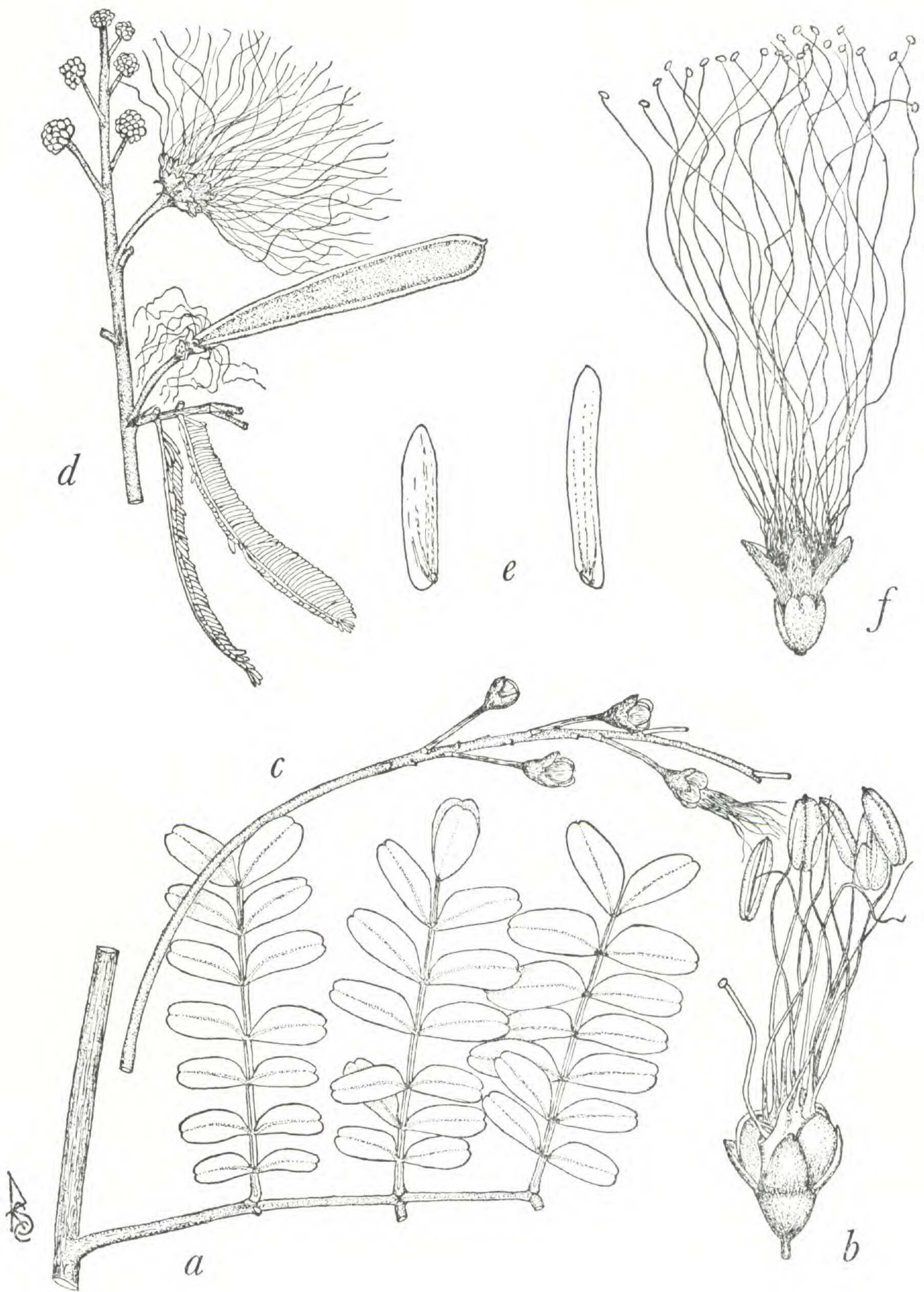
EXPLANATION OF THE ILLUSTRATION

PLATE XXIX. a-c, *JACQUESHUBERIA AMPLIFOLIOLA* Cowan. a, habit, one half natural size. b, one flower, one and one half times natural size. c, portion of inflorescence, one half natural size.

d-f, *CALLIANDRA VAUPESIANA* Cowan. d, habit, one half natural size. e, two leaflets, illustrating variation in size and shape, three times natural size. f, one flower, one and one half times natural size.

Drawn by RICHARD S. COWAN

PLATE XXIX



bodies among the hairs. These have been observed previously in petals of *Tachigalia*, although occurring on the inner surface of sepals of several species.

Apparently individual flowers or small clusters of flowers are subjected to insect attack. Gall-like formations, somewhat rounded and measuring up to 1.5 cm. length, result. The pedicel of a gall-bearing flower is obvious; the receptacle-cup, while tumescent and abnormally large, maintains much of its symmetry, and the sepals and petals are larger, more crassate, and apparently more pubescent. The stamens and pistil form an amorphous mass within. Dissection of the mass reveals that it is somewhat coriaceous in texture; pollen grains and ovules were not found. These gall-like structures are soon deciduous.

COLOMBIA: Comisariías del Amazonas y Vaupés, Rio Apaporis, Cachivera de Jirijirimo and vicinity. Altitude about 250 m. "Large tree. Flowers yellow." September 16, 1951. *Richard Evans Schultes & Isidoro Cabrera 14045* (TYPE in Herb. Mo. Bot. Gard.).

BURSERACEAE

Paraprotium amazonicum *Cuatrecasas sp. nov.*

Arbor magna, ramis extremis minute tomentulosis brunneis angulosis. Folia alterna composita, in specimine paripinnata 8-juga, 90–100 cm. longa, foliolis petiolulatis oppositis. Petioles 30 cm. longus robustus rigidus striatus basi incrassato-dilatatus, minute puberulus vel glabratus in rhachidem productus. Rhachis 40 cm. longa internodiis 5–6 cm. longis striata minute puberula. Petioluli circa 12 mm. longi robusti erecti vel striati minute puberuli. Lamina foliolorum oblonga, basi rotundata subsymmetrica vel leviter asymmetrica (in foliolis duobus terminalibus basi cuneata asymmetrica excepto), apicem versus paulo attenuata apice subite cuspidato-caudata, margine integerrima, 14–26 cm. longa, 5.5–7 cm. lata,

plus caudicula 2–2.5 cm. longa; supra in sicco pallide brunnescenti nitida glabra costa angusta notata, nervis secundariis filiformibus prominulisque, nervulis minoribus reticulatis plusminusve prominulis; subtus pilis minutis conicis rubellis copiosis praedita, costa crassa elevata striata puberula, nervis secundariis 12–16 utroque latere prominentibus patulis prope marginem subite arcuatis anastomosatisque, ceteris nervis laxum reticulum prominulum formantibus. Inflorescentiae axillares, in specimine fructiferae ad terminationem ramuli, paniculatae; axibus robustis striatis, basi valde incrassatis, minute tomentulosis 22–30 cm. longis, ramulis patulis 7– cm. longis tomentellis. Pedicelli fructiferi crassi 2–4 mm. longi tomentosi. Fructus vulgo 1-pyrenus oblique ovatus basi asymmetrice rotundatus extremo acutiusculus in sicco 2.2–2.5 cm. longus, 1.5 cm. latus, vel 2-pyrenus late ovatus adpressus basi subtruncatus apice subacutus in sicco 2.2 cm. altus, 2.3 cm. latus; epicarpio coriaceo extus brunneo tomentoso denique dehiscenti, mesocarpis pulposo, endocarpio corneo. Pyrenus ovoideo-oblongus zygomorphus uno latere gibbosus basi rotundatus apice angustatus triquetro-acutissimus circa 18 mm. longus, 9–10 mm. latus. Epispermum membranaceum, embryo recto cotyledonibus plano-convexis circa 14 mm. longis (in sicco) 6 mm. latis.

Dr. Cuatrecasas writes: “*Paraprotium amazonicum* is closely related to *P. vestitum* Cuatr., from the Pacific Coast of Colombia. It differs from it by its leaves having more numerous oblong, narrower leaflets which are minutely puberulent and more prominently reticulate beneath. Furthermore, *Paraprotium amazonicum* has smaller and more zygomorphous fruits and more acute pyrenes.”

BRAZIL: Estado do Amazonas, Rio Negro, Jucabí (near mouth of Rio Curicuriari) and vicinity. “Tree 75 feet tall with columnar trunk above buttress and stilt roots to 4 ft. Bark outside smooth, brown,

inside red. Terminal branches with white, latex-like sap. Fruit outside golden, inside smooth, pink. Seed olive green, surrounded by acidic white pulp. On high land." September 21-25, 1947. *Richard Evans Schultes & Francisco López 8835* (TYPE in Gray Herb.).

GUTTIFERAE

Dr. Bassett Maguire has submitted the following critical notes on the genus *Lorostemon*.

In an area near Manáos, where for more than a century the famous botanical explorers of the Amazon Basin (Martius, Spruce, Ule and others) had made headquarters for long periods of time, Ducke discovered a remarkable stand of small trees to which he gave count, ". . . vingtaine d'arbres adultes . . ." From specimens collected there, he described *Lorostemon bombaciflorum* which he proposed (Ducke, A. in Arch. Inst. Biol. Veg. 1 (1935) 210) as the type of a new monotypic subfamily, the *Lorostemonoideae* of the *Guttiferae*. Principal criteria upon which the new subfamily was based were: 1, the arrangement of the anthers, five each in five concrete undivided phalanges; and, 2, the ovary borne on a long gynophore similar to that of many capparids. Arrangement of the stamens in five phalanges is, of course, not unique in the *Guttiferae*, being generally characteristic of the genera of the *Moronobaeae*. But the stipitate ovary base was not otherwise known for the family.

I have before me an isotype of *Lorostemon bombaciflorum*: *Ducke 23768* (NY)—and two additional sheets, *Ducke 944* and *1200*, obtained from the type locality in 1942 and 1943, respectively. All three collections are faithful to the original description.

Now, Schultes and Cabrera have made three additional collections of *Lorostemon*, but from the region of the Río Apaporis, an affluent of the Caquetá or Japurá, some 800 miles to the west and north of Manáos. Two

collections (*Schultes & Cabrera 17619* of September 25, 1952, and *17638* of September 25–26, 1952) differ strongly from the isotype and topotypes of the original species, as the following table of comparison will show. The third, a fruiting collection (*Schultes & Cabrera 15910* of March 2, 1952) has the dark-colored branchlets, smaller gradate and more numerous sepals of *Lorostemon bombaciflorum*, and, as in that species, lacks the conspicuous torus-like peduncle between the bractioles and calyx. The leaves, however, are oblong and not obovate as in *Lorostemon bombaciflorum*. *Schultes & Cabrera 15910* is tentatively assigned to *Lorostemon bombaciflorum* until flowering material of it is collected.

| | <i>L. bombaciflorum</i> | <i>L. colombianum</i> |
|-------------|--|---|
| Branchlets | dark reddish brown | pale reddish brown |
| Leaf-blades | 10–15 × 4–6 cm., broadly obovate | 18–22 × 6–7 cm., oblong-elliptic |
| Calyx | sepals gradate, 9–11, ovate, acute, 6–12 mm. long | sepals little or not at all gradate, 5, orbicular, 18–20 mm. long |
| Peduncle | peduncles lacking, flowers sessile | peduncle 8–12 mm. long, crassate, turbinate |
| Petals | 80–105 × 10 mm. | 80–90 × 20 mm. |
| Stamens | in 5 wholly concrete phalanges, anthers 5 per phalange | in 5 phalanges, filaments adnate only below the middle, above the middle free, anthers 10–12 per phalange, free |

***Lorostemon colombianum* Maguire sp. nov.**

Arbor mediocris 6–7 metralis alta cum latice luteo; ramulis glabris non-angulatis, tenuis, internodiis 3–6 cm. longis; foliis oppositis aliquando suboppositis vel alternatis; laminis firme chartaceis vel subcoriaceis, oblongis vel elliptico-oblongis, vulgo 18–22 cm. longis, 4.5–7 cm. latis, apice prominente acute et abrupte acuminato, 10–

15 mm. longo; basi obtusa vel acuta; costa prominente, venis lateralibus parallelis, prominulis 1–2 mm. distantibus, nervo colectivo a margine ca. 1 mm. remoto; flora solitari terminale exteriori rubro sursum maculato; bracteis paucis aggregatis acute triangularibus vel ovato-triangularibus 2–5 mm. longis; pedunculo crasso turbinato 5–10 mm. longo; sepalis 5, imbricatis non-gradatis ovato-orbicularibus, 15–18 mm. latis, 15–20 mm. longis, subscariosis; petalis 8–9 cm. longis, ca. 2 cm. latis, lineari-oblongatis, apice acutiusculo; staminibus 50–60 in 5 phalangibus, quisque cum 10–12 staminibus; filamentis ad basim ca. 2 cm. in ligulo connatis, partis liberis planis tenuis, ca. 0.6–0.7 mm. latis, 2–2.5 cm. longis; antheris introrsis linearibus 2–2.5 cm. longis, 0.6–0.7 mm. latis, apice saepe recurvato, connectivo aliquantum alato; pistillo longi-stipitato, ovario 5-loculari, ovulis numerosis, stylis brevi-cornutis, 5; fructu ignoto.

COLOMBIA: Comisaría del Amazonas, Río Ricapuyá, tributary of Río Apaporis below mouth of Río Piraparaná. September 25–26, 1952. *Richard Evans Schultes & Isidoro Cabrera 17638* (TYPE in Herb. N.Y. Bot. Gard.).—Comisarias del Amazonas and Vaupés, Río Apaporis at mouth of Río Piraparaná. “Tree 6 m. high. Flowers red outside, greenish at base and red-spotted above; calyx green. September 25, 1952. *Schultes & Cabrera 17619*.

MELASTOMACEAE

The following studies in the Melastomaceae have been contributed by Dr. John Wurdack.

***Centronia vaupesana* Wurdack sp. nov.**

Centroniae reticulatae Triana affinis sed cum foliorum laminis supra non reticulato-venosis indistincte 5-nerviis, ovario apice glabro. Rami robusti indistincte sulcati cum petiolis pedunculoque primum rufo-furfuracei mox glabrati. Petioli 2–3 cm. longi; lamina 11–17×4–7.5 cm. ovata apice hebeti-acuta paulo acuminata) basi rotun-

data, integra 5-nervia nervis duobus exterioribus submarginalibus debilioribus nervis primariis secundariisque supra leviter angusteque impressis subtus bene elevatis nervulis supra obscuris subtus paulo elevato-reticulatis, supra glabra et nitidula, subtus in superficie glabra in nervis sparse furfuraceis. Inflorescentia 4–5 cm. longa pauciflora, floribus 5-meris fasciculatis. Pedicelli 4–7 mm. longi cum hypanthio calyceque setulosi, setis crassis (ad basim 0.3 mm. diam.) usque ad 1.5 mm. longis minute tuberculatis. Hypanthium (ad torum) $7 \times 4-5$ mm.; calyx in alabastro clausus 9 mm. longus conicus ad anthesim ad torum dehiscens. Petala 20×18 mm. apice oblique rotundata. Stamina isomorphica; filamenta 6 mm. longa; thecae 7 mm. longae subulatae, connectivo basi non prolongato dorsaliter calcarato calcari acuto 1.6 mm. longo. Stylus ca. 14×0.5 mm.; stigma truncatum; ovarium 5-loculare glabrum apice in collum 1.3 mm. altum circum stylum protractum, collo apice breviter (0.2–0.3 mm.) 10-lobato.

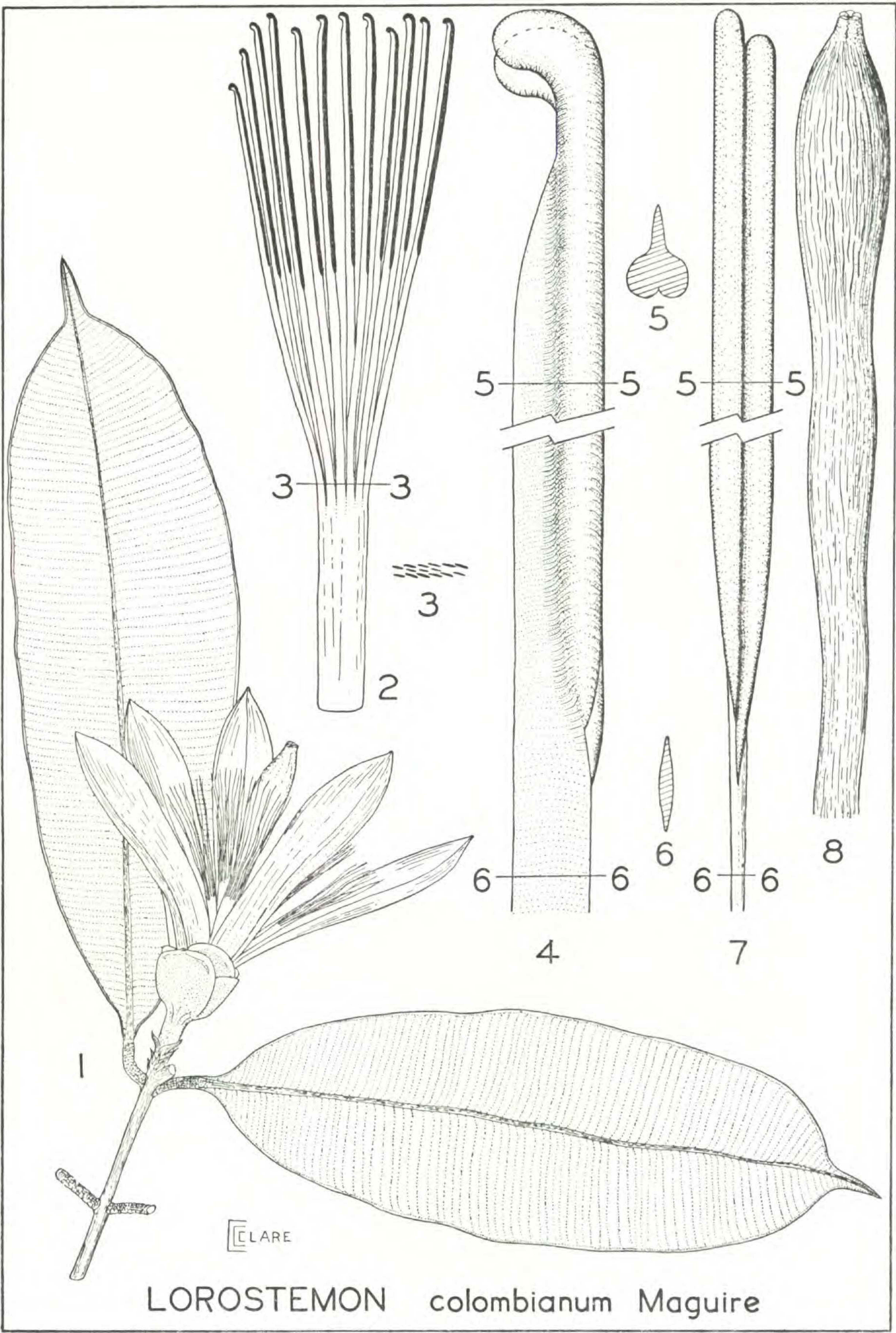
Spruce 4840 (K), the type collection of *Centronia reticulata*, has been compared with *C. vaupesana*. The Peruvian species has striking upper leaf surface venule reticulation, 3-nerved leaf blades with no trace of fourth and fifth veins, slightly larger flowers, and (despite Cogniaux and Triana's 'glabrous' descriptions) the ovary apex sparsely puberulous with slender brown hairs to 0.3 mm. long. *Centronia laurifolia* D. Don is another possible relative, but its leaves are larger and 3-plinerved, the flowers 'sessile,' and the 'subacute' petals only 1 cm. long.

COLOMBIA: Comisaría del Vaupés, Río Piraparaná, Raudal Na-hoógaw-he. "Spindly tree 8 m. tall. Flowers white. Maku name: *kanang*." August 30, 1952. *Richard Evans Schultes & Isidoro Cabrera 17100* (TYPE in Herb. N.Y. Bot. Gard.).

EXPLANATION OF THE ILLUSTRATION

PLATE XXX. *LOROSTEMON COLOMBIANUM* *Maguire*, drawn from the holotype, *R. E. Schultes & I. Cabrera 17638* (NY). 1, flowering branch, one half natural size. 2, ventral view of phalange of stamens, one and one half times natural size; note dextrorse orientation of anthers. 3, cross-section diagram showing arrangement and orientation of filaments at position 3-3. 4, ventral view of extrorsely oriented anther, twenty times natural size. 5, cross-section of anther at positions 5-5, twenty times natural size. 6, cross-section of filament at positions 6-6, twenty times natural size. 7, lateral view of anther, twenty times natural size. 8, pistil, one and one half times natural size.

Drawn by C. C. CLARE



Macairea Schultesii *Wurdack sp. nov.*

Macairea arirambae Hub. et *M. scabrae* Cogn. affinis, sed foliis breviter petiolatis 5-nerviis. Fruticosa ca. 1-metralis, ramulis pilis rufidulis eglandulosis appressis ca. 1 mm. longis densiuscule vestitis. Petiolus 2–5 mm. longus; lamina 2.5–6 × 2–3.5 mm. elliptica vel paulo ovato-elliptica apice late acuta bis obtusa basi obtusa bis subcordata margine integra 5-nervia vel sub-7-nervia, supra dense tuberculato-aspera setis 1–4 mm.² basi ad 0.4 mm. expansis apice pilo deciduo ad 0.5 mm. longo armatis, subtus densissime strigulosa pilis gracilibus rufescentibus eglandulosis ad 0.3 mm. longis (ad nervos ad 1.5 mm. longis) et cum guttulis flavidis modice interspersa. Bracteae inflorescentiae 3–5 × 2–3 mm. deciduae sparse pilosulae extus modice gracili-strigulosae et sparse cum guttulis flavidis armatae; pedunculi pedicellique pubescentia ut ramulorum eadem; pedicelli 1–4 mm. longi. Hypanthium 2.7–3 × 2–2.3 mm. cum sepalis extus modice graciliterque rufo-strigulosum et cum guttulis flavidis dense inspersionem. Sepala ad basim 0.6–0.7 mm. coalita, lobis 1.3–1.8 × 1.2–2 mm. triangularibus bis ovatis apice acutis vel obtusis. Petala 7–9 × 4–6.5 mm. obovata apice rotundata ad marginem apicem versus cum guttulis flavidis armata. Stamina dimorphica, filamentis apicem versus glandulis flavidis brevistipitatis armatis: antherarum thecae apice attenuatae. Stamina maiora: filamenta 7.7–9.3 mm.; antherarum thecae 3.5–5.3 mm., connectivo sub thecis 2–3.2 mm. producto, appendicibus oblongis bis rotundatis 0.7–0.9 × 0.5–1 mm. Stamina minora: filamenta 4.5–6.5 mm.; antherarum thecae 2.9–4.1 mm., connectivo sub thecis 0.9–1.3 mm. producto, appendicibus oblongis bis rotundatis 0.8–1 × 0.7–1 mm. Stylus 3.5–4.5 (–10.5) × 0.2–0.4 mm. modice cum guttulis flavidis armatus; ovarium 4-loculare totum cum guttulis flavidis apicem versus brevistipitatis (ad 0.1 mm.

modice vel dense armatum; semina $0.7 \times 0.4-0.5$ mm. cochleata haud profunde foveolata, cum guttulis rubris.

Macairea arirambae and *M. scabra* both have 3-nerved leaves with longer petioles. Other possible relatives are *Macairea albiflora* Cogn. and *M. theresiae* Cogn., both (ex char.) having much larger, longer-petiolate leaves with attenuate bases. Another collection probably referable to *Macairea Schultesii* is *Gutiérrez & Schultes 656* from the Cerro de Chiribiquete, Río Macaya, Vaupés, Jan. 17, 1944; the specimen of this collection in the Herbarium of the New York Botanical Garden is, however, sterile.

COLOMBIA: Comisaría del Vaupés, Río Kuduyari, Cerro Yapobodá. Savannahs on quartzite base. Altitude about 450 meters. "Bush 2-3 feet tall. Flowers white." October 2-6, 1951. *Richard Evans Schultes & Isidoro Cabrera 14358* (TYPE in N.Y. Bot. Gard.).—Same locality. "Low bush 1-2 feet high. Flowers white." October 4-6, 1951. *Schultes & Cabrera 14350* (US).—Comisaría del Vaupés, Río Kubiýú (tributary of Río Vaupés), Cerro Kañendá. Savannahs about 15 miles upstream from mouth. Quartzite base. Altitude about 800-900 feet. "Shrub. Height 4 feet." November 10, 1952. *Schultes & Cabrera 18324* (NY).—Comisaría del Vaupés, Río Karurú (tributary of Río Vaupés), Mesa de Yambi. Savannah Goo-ran-hoo-dá. Quartzite base. Altitude about 950-1000 feet. "Bush. Flowers whitish to pink." April 15-16, 1953. *Schultes & Cabrera 19146* (US).—Comisaría del Vaupés, Río Paraná Pichuña (tributary of Río Vaupés). Altitude about 700 feet. "Bush. Flowers yellow." June, 1953. *Schultes & Cabrera 19953* (NY).

***Siphanthera vaupesana* Wurdack sp. nov.**

A congeneribus circa *Siphanthera Hostmannii* differt trichomatibus paucissimis eglandulosis. Herba 15-25 cm. alta superne multiramosa; ramuli quadrati glabri setis brevibus paucis nodosis exceptis. Folia anguste obovato-elliptica vel anguste elliptica pauci-serrulata; lamina $4-6 \times 1.5-2.5$ mm. apice acuta basi attenuata uninervia nervulis secundariis paucis, obscure punctata glabra vel supra primum setis paucis brevibus appressis ornata; petiolus

1–2 mm. longus. Glomeruli bracteati 2–4-flori floribus 4-meris subsessilibus (pedicellis 0.2 mm. longis); bracteeae foliosae fere sessiles setoso-serrulatae glabrae. Hypanthium cum calyce glabrum cum glandulis sessilibus caducis ornatum; hypanthium $2-2.6 \times 1$ mm.; calycis lobi $1.2-1.3 \times 0.6$ mm. acuti. Petala ligulata; lamina 0.7×0.6 mm. ovata acuta non setosa; unguis 0.6×0.2 mm. longus. Stamina oppositipetala; antherae $1-1.1 \times 0.4$ mm. (rostro et connectivo exclusi), rostro 0.25×0.1 mm. minute (0.06 mm.) uniporoso, connectivo sub anthera 0.3 mm. producto indistincte bilobulato parte expansa 0.3 mm. lata; filamenta 2.2 mm. longa; staminodia desunt. Ovarium biloculare; stylus $4.5 \times 0.1-0.15$ mm. apicem versus leviter expansus; stigma truncatum; capsulum bivalve; semina ellipsoidea $0.4 \times 0.2-0.25$ mm. laxe elongato-areolata.

Siphanthera Hostmannii (synonymous with *S. Tatei* Gleason and *S. capitata* Gleason) and its poorly distinguished relatives (*S. tenera* Pohl, *S. subtilis* Pohl, *S. pratensis* Mgf., *S. ramosissima* Cogn. ex Hoehne, *S. paraensis* Huber) all have varying amounts of gland-tipped trichomes. The descriptions and illustrations of all except *Siphanthera Hostmannii*, *S. paraensis* and *S. ramosissima* omit mention of staminodia. All relatives of *S. vaupesana*, except *S. pratensis* and *S. subtilis*, have wide-pored and essentially erostrate anthers.

COLOMBIA: Comisaria del Vaupés, Rio Vaupés, Raudal de Yurupari. On sand or quartzite base. November, 1951. *Richard Evans Schultes & Isidoro Cabrera 19723* (TYPE in N.Y. Bot. Gard. DUPLICATE TYPE in U.S. Nat. Herb. No. 2,195,539).

MYRSINACEAE

Conomorpha lithophyta *R. E. Schultes sp. nov.*

Arbuscula saxicola parva, usque ad decem ped. alta, pauce ramosa, ramulis junioribus minute albido-tomentellis, mox glabrescentibus, ramis cortice cinereo cum

petiolorum cicatricibus conspicuis oblecto. Folia vivo aliquid reclinata; petiolis fuscis, sulcatis, minutissime tomentellis, 2–3 cm. longis, plusminusve 3–4 mm. in diametro; lamina valdissime coriacea, obovata, conspicue marginata, apice obtusa vel rotundata, statu adulto 9–13 cm. longa, 5–6.5 cm. lata, supra vivo atroviridia (siccitate stramineo-fusca), nitida glabraque, nervis haud conspicuis, subtus pallidiora, apparenter glabra sed per vitream minutissime et remote albido-lepidota, nervo centrale valde elevato. Inflorescentiae strictae, saepe rigide arcuatae, numerosae, foliis breviores, densissime multiflorae, usque ad basim florigerae, axi aliquid crassiusculo, dense et molliter aureo-tomentello. Flores sessiles, patentes, plerumque 4 mm. longi, ore 4–4.5 mm. in diametro, albo-lutei, fragrantissimi. Sepala base connata, lobis triangularibus, acutis, plusminusve 1.8 mm. longis, 1 mm. latis, extus dense aureo-glanduloso-tomentellis, intus minute pulverulentis. Petala media pro parte connata, lobis crassioribus, ovatis, apice obtusis, 4 mm. longis, 1.8–2 mm. latis, extus sed intus densiore albido-glanduloso-papillosis. Stamina petalis breviora; filamentis crassioribus et petala adnatis; antheris recurvis, 0.6 mm. longis. Ovarium lageniforme, 0.7–0.8 mm. in diametro, bene lepidatum, stylo cylindrico, crasso, usque ad 1.5 mm. longo. Fructus adhuc ignotus.

The specific epithet of *Conomorpha lithophyta* ("stonedwelling plant") refers to the habitat chosen by this small, bushy treelet. The Savannah of Yapobodá has a base of metamorphosed quartzite of probable Cretaceous age. The endemic flora which covers it is highly adapted to xerophytism—a xerophytism due primarily to the lack of soil and consequent mechanical loss of rain-water. *Conomorpha lithophyta* inhabits the most inhospitable parts of the savannah and exhibits a predilection for rock outcroppings (see Plate XXXII, lower figure).

The closest ally of *Conomorpha lithophyta* seems to be *C. magnoliifolia* Mez, a species of British Guiana and Surinam. The former can be distinguished from the latter at once by its very compact and densely many-flowered spikes (in contrast to loosely fewer-flowered racemes). There are also minor floral differences, such as the triangular lobes of the calyx and the lageniform ovary in *Conomorpha lithophyta* (in contrast to ovate lobes and a subglobose ovary in *C. magnoliifolia*).

Like *Conomorpha magnoliifolia* in Surinam, this new species is reported to be employed as a minor fish-poison. The Kubeos living along the uppermost course of the Río Kuduyarí sometimes crush the leaves of *Conomorpha lithophyta* for use in fishing in stagnant lagoons. The Kubeo name of the tree is *dá-pee-ka-hee*, meaning savannah (*dá*) fish-poison (*pee-ka-hee*).

COLOMBIA: Comisaria del Vaupés, Río Kuduyarí, Savannah of Yapobodá. "Tree 10 feet tall. Flowers fragrant, yellow. Inflorescence frequented by bees." September 4, 1956. *Arthur F. Barclay & Richard Evans Schultes 560* (TYPE in Herb. Gray).—Same locality and date, *Barclay & Schultes 543*.—Same locality and date, *Barclay & Schultes 565*.

APOCYNACEAE

Dr. Robert Woodson has contributed the descriptions and discussions of the apocynaceous plants which are discussed in the following lines.

Mandevilla annulariifolia *Woodson sp. nov.*

Frutex volubilis; ramis crassis vel crassiusculis juvenate minute papillatis mox cortice valde anguloso saturate rubro-vernicioso tectis, ramulis saepe verticillatis. Folia verticillata saepissime quaternata subsessilia linearia 2–5 cm. longa, 1–4 mm. lata, firmiter membranacea glabra nervo medio supra distante glanduligero. Inflorescentia terminalis vel subterminalis pauciflora; pedunculo

vix 1 cm. longo minute puberulo; pedicellis ca. 2 mm. longis minute puberulis; bracteis minute ovatis vix 1 mm. longis. Calycis lacinae ovatae acutae ca. 1.5 mm. longae minute papillatae intus basi squamella profunde lacerata munitae. Corolla infundibuliformis lutea extus minutissime papillata; tubo proprio ca. 2 cm. longo basi ca. 1 mm. diam. paululo gibboso; faucibus tubulocampanuliformibus ca. 1.7 cm. longis, ostio ca. 0.6 cm. diam.; lobis late dolabriformibus patulis ca. 1.2 cm. longis. Antherae late oblongo-sagittiformes basi rotundate 2-lobae ca. 3.5 mm. longae apice minutissime barbatae caeterumque glabrae. Ovarii carpella vix 1 mm. longa glabra nectario late 5-lobo ovario ca. dimidio aequante; stigmatibus pentagono-umbraculiformi obscure apiculato ca. 1 mm. longo. Folliculi gracillimi falcati obscure articulati usque 10 cm. longi.

Mandevilla annulariifolia is closely allied, indubitably, to *M. Bentharii* of the Roraima shield of interior Venezuela and Guiana, which are low erect shrubs with somewhat broader and thicker leaves and more elongate inflorescences. The suggestively antediluvian appearance of *Mandevilla annulariifolia* is imparted by the narrow, whorled leaves borne in dense tufts at the ends of the thick, frequently whorled branchlets.

COLOMBIA: Comisaría del Vaupés, Río Apaporis, Cachivera de Jirijirimo y alrededores. Altitude about 250 m. September 16, 1951. *Richard Evans Schultes & Isidoro Cabrera 14013* (TYPE in Mo. Bot. Gard.).—Río Apaporis, Raudal de Jirijirimo, November 27, 1951. *Schultes & Cabrera 14627*.—Río Apaporis, Raudal de Jirijirimo, below mouth of Río Kananari, December 8, 1951. *Schultes & Cabrera 13503*.—Comisaria del Vaupés, Río Piraparaná, tributary of Río Apaporis, September 18, 1952. *Schultes & Cabrera 17536*.

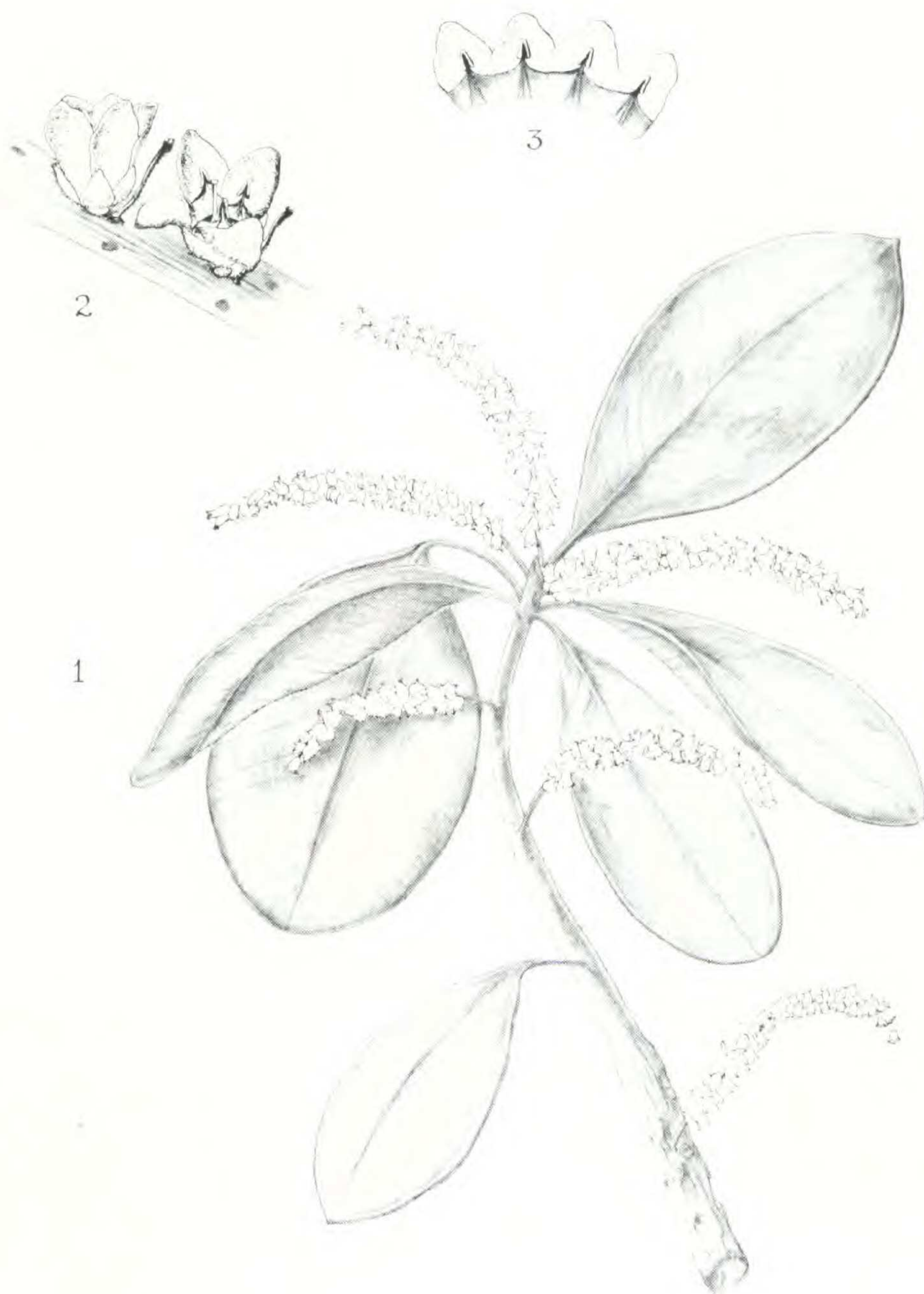
***Mandevilla cuneifolia* Woodson sp. nov.**

Frutex volubilis; ramulis gracilibus glabris. Folia decussata breviter petiolata; lamina obovata vel elliptico-obovata abrupte acuminata basi acuta 4–7 cm. longa,

EXPLANATION OF THE ILLUSTRATION

PLATE XXXI. CONOMORPHA LITHOPHYTA *R. E. Schultes*. 1, flowering branch, slightly less than one half natural size. 2, portion of inflorescence, showing two flowers, approximately two and one half times natural size. 3, petals opened, approximately twice natural size.

Drawn by RUTH BARTON



CONOMORPHA
lithophyta

R. E. Schultes

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EXPLANATION OF THE ILLUSTRATION

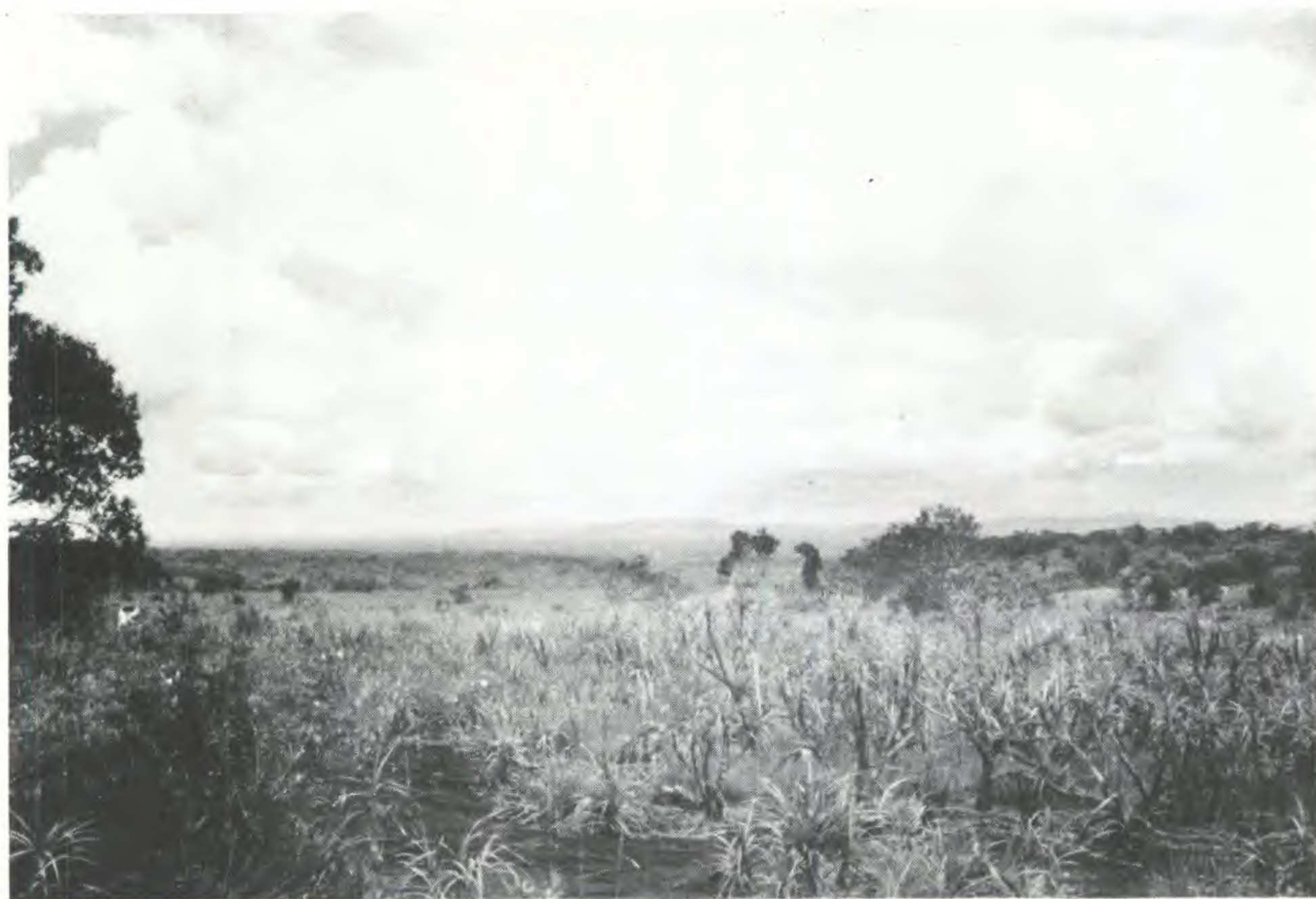
PLATE XXXII. (*Upper*) View of the quartzitic savannah at Yapobodá, upper Rio Kuduyari, Comisaria del Vaupés, Colombia—type locality of *Conomorpha lithophyta*.

(Courtesy American Orchid Society, Inc.)

(*Lower*) CONOMORPHA LITHOPHYTA *R. E. Schultes*.
Flowering branch of the type plant.

Photographs by RICHARD EVANS SCHULTES

PLATE XXXII



EXPLANATION OF THE ILLUSTRATION

PLATE XXXIII. CONOMORPHA LITHOPHYTA *R. E.*
Schultes. Habit photograph of the type plant.

Photograph by RICHARD EVANS SCHULTES

PLATE XXXIII



1.5–2.5 cm. lata firmiter membranacea glabra nervis secundariis arcuatis sat remotis nervo medio supra pauciglandulifero; petiolo 3–5 mm. longo. Inflorescentia lateralis vel subterminalis pauciflora glabra; pedunculo 1–2.5 cm. longo; pedicellis subnullis; bracteis minutissime ovatis. Calycis lacinae ovato-trigonales longe acuminatae extus papillatae intus squamella deltoidea minute erosa munitae. Corolla infundibuliformis lutea extus omnino glabra; tubo proprio 3.5–4 cm. longo basi ca. 1.5 mm. diam.; faucibus conicis ca. 2.5 cm. diam., ostio ca. 1 cm. diam.; lobis late dolabriformibus ca. 2 cm. longis patulis. Antherae obovato-oblongae basi breviuscule auriculatae ca. 3 mm. longae dorso glabrae. Ovarii carpella ovoidea ca. 1.5 mm. longa, nectariis 5 plusminusve connatis subaequilongis; stigmate pentagono-umbraculiformi obscure apiculato ca. 1 mm. longo.

A member of the *Mandevilla scabra* alliance, *M. cuneifolia* is distinguished by the obovate or elliptic-obovate cuneate leaves and reduced inflorescence.

COLOMBIA: Comisaría del Vaupés, Río Piraparaná (tributary of Río Apaporis), Caño Teemeeña, Savannah O-koo-me-gwa, September 6, 1952. *Richard Evans Schultes & Isidoro Cabrera 17234* (TYPE in Mo. Bot. Gard.).—Comisaría del Vaupés, Río Vaupés, between Mitú and Javareté, Yutica, May 14–24, 1953. *Schultes & Cabrera 19377*.

***Mandevilla stephanotidifolia* Woodson sp. nov.**

Frutex volubilis; ramulis teretibus vel paulo compressis glabris. Folia decussata petiolata; lamina latiuscule oblongo-elliptica in acumine breve abrupte contracta basi obtusa vel rotundata 6–12 cm. longa, 4–7 cm. lata subcoriacea subglauca glabra nervo medio supra distante glandulifero; petiolo ca. 1 cm. longo. Inflorescentia aut terminalis aut lateralis spicata multiflora; pedunculo ca. 6–12 cm. longo crassiusculo glabro; pedicellis nullis vel vix bene manifestis; bracteis speciosis petalaceis (albis?) caducis late oblongo-obovatis carinatis apice valde acu-

minatis sessilibus 2.5–3 cm. longis. Calycis lacinae late ovatae acutae ca. 1 mm. longae extus minutissime papillatae intus basi squamella truncate deltoidea praeditae. Corolla infundibuliformis lutea extus glabra vel indistincte papillata tubo laeviter arcuato-gibboso; tubo proprio ca. 3 cm. longo basi ca. 2 mm. diam.; faucibus concicis ca. 1.5 cm. longis, ostio ca. 1 cm. diam.; lobis late dolabriformibus ca. 1.7 cm. longis patulis. Antherae oblongo-ellipticae basi obtuse auriculatae ca. 6.5 mm. longae dorso glabrae. Ovarii carpella gemina oblongo-fusiformia ca. 2 mm. longa indistincte papillata basi nectariis 5 subquadratis carnosius cincta; stigmatibus pentagono-umbraculiformi longe apiculato ca. 4 mm. longo. Folliculi graciles falcati apice saepe coaliti obscure moniliformes 8–10 cm. longi glabri.

Mandevilla stephanotidifolia is closely related to *M. Steyermarkii* of the Roraima shield, which, however, has slenderer stems, thinner, cordate-ovate leaves, and a slenderer inflorescence.

COLOMBIA: Comisaría del Vaupés, Río Apaporis, Cachivera de Jirijirimo y alrededores. Altitude about 250 m., September 16, 1951. *Richard Evans Schultes & Isidoro Cabrera 14010* (TYPE in Mo. Bot. Gard.).—Río Apaporis, Raudal Jirijirimo, below mouth of Kananarí. Altitude about 900 ft. January 21, 1952. *Schultes & Cabrera 14952*.—Río Apaporis, Raudal de Jirijirimo, November 27, 1951. *Schultes & Cabrera 14632*.—Comisaría del Amazonas, Río Caquetá, La Pedrera and vicinity, May 2, 1952. *Schultes & Cabrera 16325*.

***Mandevilla thevetioides* Woodson sp. nov.**

Frutex humilis; ramulis crassis juventate ancipitibus minute puerulo-papillatis mox cortice atrorubescenti tectis. Folia decussata brevissime petiolata lineari-elliptica cum apice tum basi anguste acuta 4–8 cm. longa, 5–10 mm. lata, coriacea margine revoluta venis secundariis multis horizontalibus supra illustra nervo medio pauciglandulifero subtus minutissime velutina; petiolo

ca. 2 mm. longo. Inflorescentia aut terminalis aut subterminalis pauciflora minute puberula; pedunculo crasso 1–2 cm. longo; pedicellis 2–3 mm. longis; bracteis minute ovatis caducis. Calycis lacinae ovatae acutae ca. 2 mm. longae extus puberulo-papillatae. Corolla infundibuliformis alba extus papillata; tubo proprio gracillimo ca. 3 cm. longo basi ca. 1 mm. diam.; faucibus anguste conicis ca. 1.5 cm. longis, ostio ca. 7 mm. diam.; lobis oblique dolabriformibus ca. 2 cm. longis patulis. Antherae late oblongo-sagittatae ca. 4 mm. longae basi obtuse bilobatae dorso glabrae. Ovarii carpella oblongoidea ca. 1.5 mm. longa glabra nectario 5-lobo basi cincta; stigmate pentagono-umbraculiformi obscure apiculato ca. 1.5 mm. longo.

Closely allied to *Mandevilla nerioides*, this new species may be distinguished by the dense horizontal secondary venation of the leaves, minutely velutinous beneath.

COLOMBIA: Comisaría del Vaupés, Río Kananari (affluent of Río Apaporis), Cerro Isibukuri. October 29, 1951. *Richard Evans Schultes & Isidoro Cabrera 14508* (TYPE in Mo. Bot. Gard.).

***Prestonia vaupesana* Woodson sp. nov.**

Frutex volubilis omnino glaber; ramulis teretibus gracillimis. Folia decussata petiolata; lamina ovato-elliptica acuminata basi obtusa 7–12 cm. longa, 3–6 cm. lata firmiter membranacea; petiolo 5–7 mm. longo. Inflorescentia simplex corymbiformis interpetiolata pluri-vel multiflora; pedunculo gracile 7–16 cm. longo; pedicellis gracillimis ca. 1.5 cm. longis in fructu accrescentibus; bracteis minimis. Calycis lacinae anguste oblongo-lanceolatae 7–8 mm. longae herbaceae apice saturiorae intus basi squamella truncata munitae. Corolla aut gilva aut livide rosea salverformis; tubo ca. 1.5 cm. longo basi ca. 2.5 mm. diam., annulo conspicuo ca. 1 mm. alto minute papillato, appendicibus epistaminalibus anguste oblongis ca. 2 mm. longis ostio vix attingentibus; lobis

late dolabriformibus ca. 9 mm. longis refractis. Antherae dimidio exsertae lanceolatae ca. 5 mm. longae dorso sparsiuscule pilosulae. Ovarii carpella ca. 1 mm. longa; nectariis carnosissimis basi connatis ovario aequantibus. Folliculi gracillimi falcati obscure articulati.

The description of new species of *Prestonia* upon suspiciously slight characters and from unicate specimens is a recurring annoyance. Although *Prestonia vaupesana* is very closely related to *P. Lindleyana* Woods., to which it will key out in my revision of the genus (in Ann. Missouri Bot. Gard. 23 (1936) 276), the several collections made by Schultes and Cabrera, all from the same general area in the valley of the Río Apaporis, give ample evidence of the characters of a natural population. From *Prestonia vaupesana*, *P. Lindleyana* differs in its somewhat more coriaceous, oblong- or obovate-elliptic foliage, in its shorter inflorescence with stouter peduncles and pedicels, and particularly in its rather broadly ovate, more substantial calyx lobes which, with the pedicels, are prominently suffused with purple.

COLOMBIA: Comisaría del Vaupés, Río Apaporis, Cachivera de Jiririmo y alrededores. Altitude about 250 m. September 16, 1951. *Richard Evans Schultes & Isidoro Cabrera 14039* (TYPE in Mo. Bot. Gard.).—Río Apaporis, Soratama above mouth of Río Kananarí and vicinity. Altitude about 900 ft. January 1952. *Schultes & Cabrera 19611*.—Río Apaporis, Raudal Yayacopi (La Playa) and vicinity. Altitude about 800 ft. August 18, 1952. *Schultes & Cabrera 16974*.—Río Apaporis entre el Río Pacoa y el Río Kananarí. Altitude about 250 m. July 5, 1951. *Schultes & Cabrera 12893*.

***Tabernaemontana rimulosa* Woodson sp. nov.**

Fruticulus humilis, ramulis crassiusculis juventate glabris mox cortice tenui griseo-fulvo longitudinaliter exfoliato tectis. Folia decussata subsessilia in paribus aequalibus; lamina anguste oblongo-elliptica apice acuta basi more subpetiolato gradatim decurrente 12–13 cm. longa, 3–3.7 cm. lata coriacea margine leviter revoluta

omnino glabra supra illustria subtus opaca lutescentia reticulo venularum fere omnino immerso. Inflorescentia interpetiolatis subterminalis subsessilis glomerate composita pluriflora; pedunculis pedicellisque perbrevibus; bracteis minimis glabris. Calycis laciniae late ovaes apice rotundatae plusminusve inaequales 2.5–3 mm. longae extus glabrae intus supra basim squamellas liguliformes 2–4 gerentes. Corollae albae lobis margine roseo-tingentibus; tubo cylindrico ca. 1.7 cm. longo, basi ca. 1.5 mm. diam. medio staminifero parte dimidio superiore extus dense minuteque velutino-papillato basim versus glabro; lobis patulis valde oblongo-dolabriformibus ca. 1 cm. longis supra dense minute velutino-papillatis. Antherae sessiles angustissime lanceolatae longe acuminatae ca. 5 mm. longae thecarum parte basali angustissima recta. Ovarii carpella oblongo-fusiformia ca. 1.5 mm. longa glabra basi nectario dimidio longitudine cincta; stigmatibus late pentagono-umbraculiformi obtuse apiculato ca. 0.7 mm. longo. Fructus ignoti.

This new species is apparently most closely related to *Tabernaemontana coriacea* Link ex R. & S., but it differs significantly in the narrower leaves, the subsessile glomerate inflorescences, the low stature and, particularly, in the thin, loosely exfoliating periderm of the older branches.